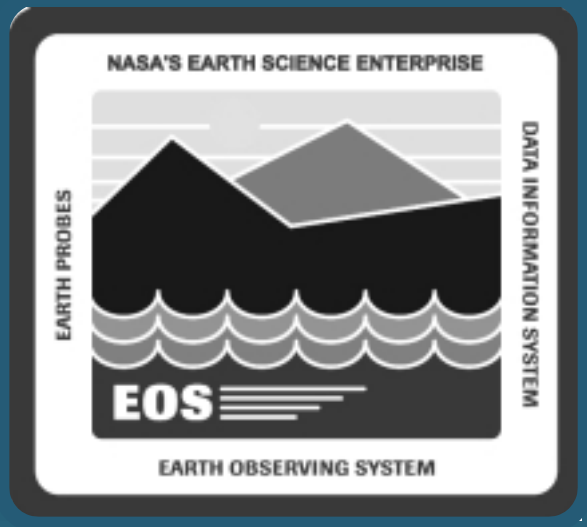
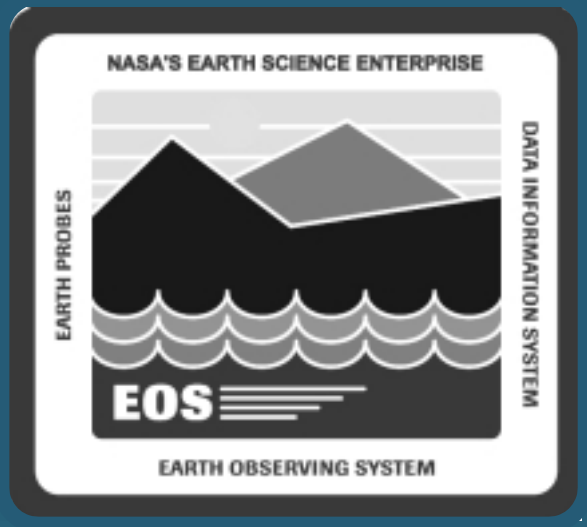


ECS SDPS
Release 5B Consent to Ship Review

11 May 2000

Raytheon

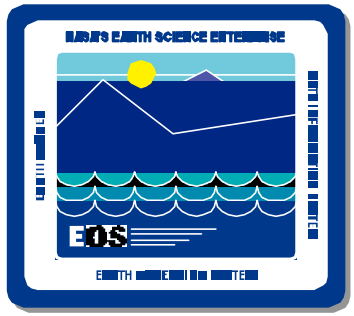


Introduction & Agenda

Mark McBride

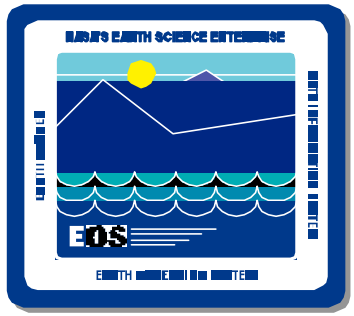
Raytheon

Agenda

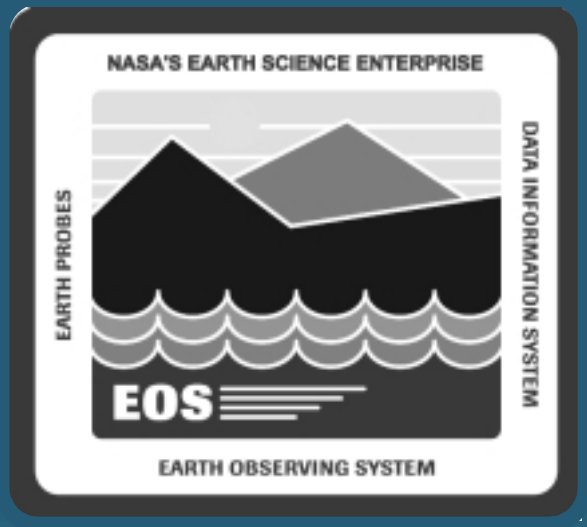


• Introduction and Agenda	Mark McBride	1:00 PM
• 5B System Functionality	Valecia Maclin	1:10 PM
• Release 5B Test Status	Bob Kniffin	1:30 PM
• Performance Verification Lab	Skip Linehan	1:50 PM
• Non-Conformance Report (NCR) Status	Randy Miller	2:10 PM
– Liens Against 5B at CSR		
Break		3:00 PM

Agenda (Cont.)



• Post-CSR Installation & Transition	Howard Ausden	3:10 PM
• ECS Support to Site Readiness	Lonney Head	3:30 PM
• Functional Configuration Audit	Joe Spyrison	3:45 PM
• CDRL Documentation Summary	Joe Spyrison	4:00 PM
• Physical Configuration Audit	Felicia Harris	4:10 PM
• Concluding Remarks	Mark McBride	4:35 PM

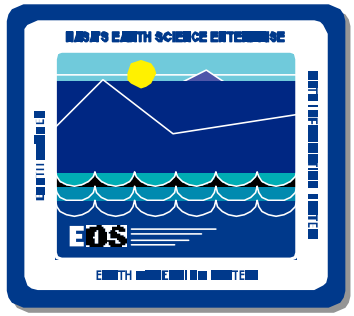


Release 5B System Functionality

Valecia Maclin

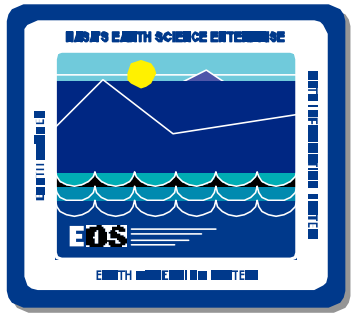
Raytheon

System Capabilities Added in 5B Overview



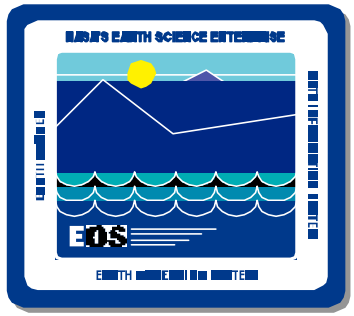
- **Terra Production Capacity**
  - **1X for L1 and 0.75X for Higher Level Production**
- **SSI&T Support for PM-1, including production rules and support for SIPS interface testing**
- **Archive and retrieval support for PM-1 L0 (EDOS), and DAS Late-Look Products**
- **Landsat 7 Partial Subintervals, Band and non-image product subsetting**
- **2-way interoperability with GDS for Product Search and Orders**

System Capabilities Added in 5B Overview



- **Enhanced Client Data Access (PSAs, ECS Core, Integrated Browse)**
- **Operational Data Transition in Support of Software Releases**
- **ESDTs developed to support AIRS and AMSR products**
- **Processing of Aqua Orbit Data**
- **Java DAR Tool**
- **User Profile Replication**

System Capabilities Added in 5B



ECS-GDS Gateway

- Bi-directional Search, Browse, Order
- Price Estimates, Order Status from GDS
- Tool for Valids Exchange and Mapping

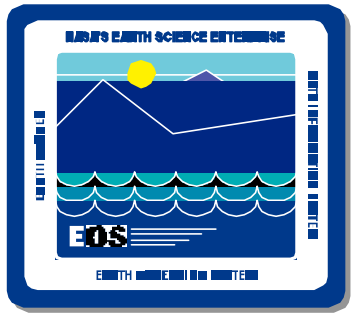
ASTER On-Demand Processing

- Replaces Manual Workaround for Higher Level Products

ASTER DEM & L1B Browse

- Automatic Use of L1A Browse for L1B and DEM

System Capabilities Added in 5B

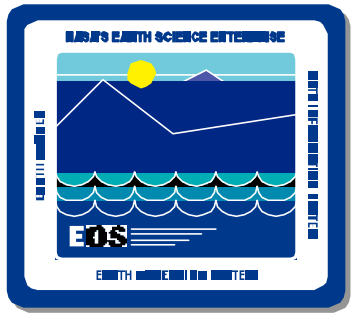


Science User Interface

- Landsat 7 Partial Subintervals & Pricing
- Lat/Long Boxes and Oriented Polygons
- Search/Display of all ECS Core Metadata and PSA
* Integrated Browse
- Java DAR Tool Enhancements: DAR Queries, Status

*Capability delivered in a Release 5A patch but formally tested as a part of Release 5B

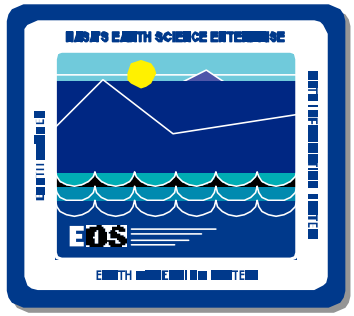
System Capabilities Added in 5B



Science Processing

- **Production Rules:**
  - **Closest Granule**
  - **Spatial Padding**
  - **AIRS Orbital Processing**
- **PM-1 DPREP (orbit only)**
- **SDP Toolkit Updates:**
  - **C++, Multi-Threading, Access to Aqua Format Data Packets**

System Capabilities Added in 5B



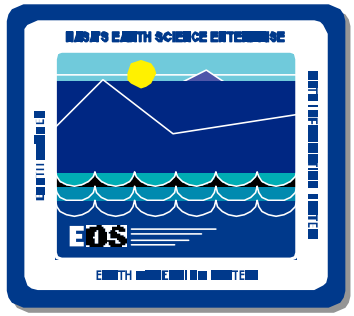
Ingest Tailoring

- **Additional Data Providers supported using the SIPS Interface:**
  - **AMSR L1A (PM-1), AMSR L1A (ADEOS), AMSR-E, *EMOS History Files**

* **DAO ingest "Late-Look" products:**
  - **DLLAPCHM, DLLAPCLD, DLLAPMOM, DLLAPMST, DLLATMP, DLLATRP, DLLAXCHM, DLLAXCLD, DLLAXENG, DLLAXLSM, DLLAXSTR**

***Capability delivered in a Release 5A patch but formally tested as a part of Release 5B**

System Capabilities Added in 5B



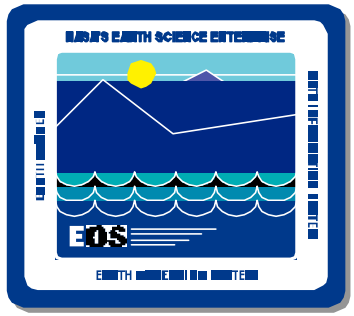
Restricted Granule Access

- Support User Groups (Privileged & Regular NASA, Non-NASA)
- Configurable Access Rules Based on QA Status
- Configurable QA Time Interval
- Access Restriction for Individual Collection

Update ESDT

- Add/Replace Services, Events
- Add Collection and Optional Inventory Attributes

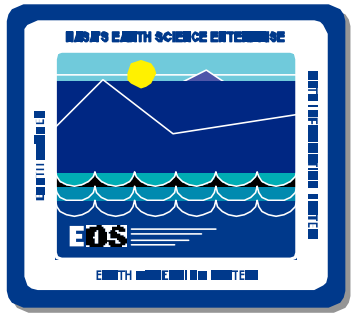
System Capabilities Added in 5B



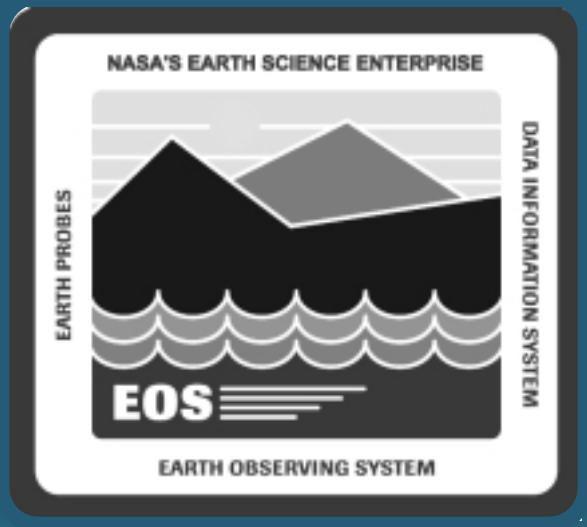
Operability & Robustness

- User Profile Replication
- Improvements to Landsat F1/F2 Error Handling
- Improved Recovery and Visibility of L7 Orders
- Improvements to Subscription Server Robustness & Restart
- Logging & Shutdown Enhancements in DMS
- Ingest Request Cancellation
- Configuration Registry
- Report Generation using IQ/SQR

Requirements and Design Process



- Tickets map to single release capabilities to single tests (where possible)
- L4 requirements derived from L3 requirements
- Tickets created for test verification purposes
  - Set of acceptance criteria for Functional Components, Error Conditions, and Performance Criteria (handled by PVC)
  - Mapping to development capabilities
  - Mapping of L4s
- Standard ESDIS approval cycle

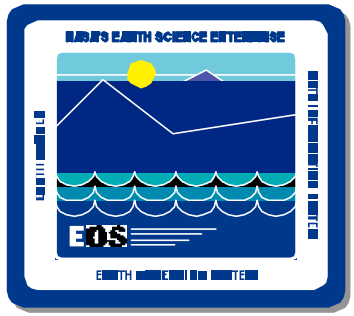


Release 5B Acceptance Testing Status

Robert Kniffin

Raytheon

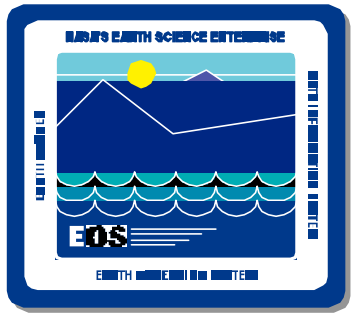
Agenda



5B Acceptance Testing Approach

5B Acceptance Testing Results

5B Acceptance Testing Approach



Tickets specifying Ops Concept, L3/L4 Requirements, and Acceptance Criteria defined for new 5B function then approved by ESDIS

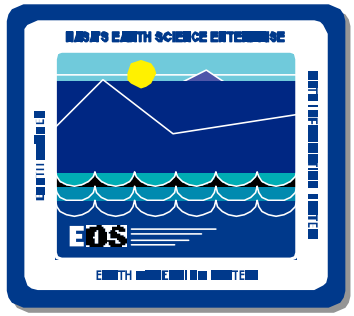
Acceptance Test Plan and Test Cases developed, assessed for completeness & coverage, then approved by ESDIS

Tests Dry Run in VATC before Formal Conduct

Tests formally conducted in VATC in presence of authorized government witnesses

Acceptance Criteria Test Status maintained by ESDIS in Verification Data Base (VDB)

5B Acceptance Testing Approach

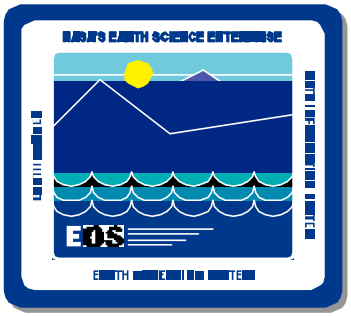


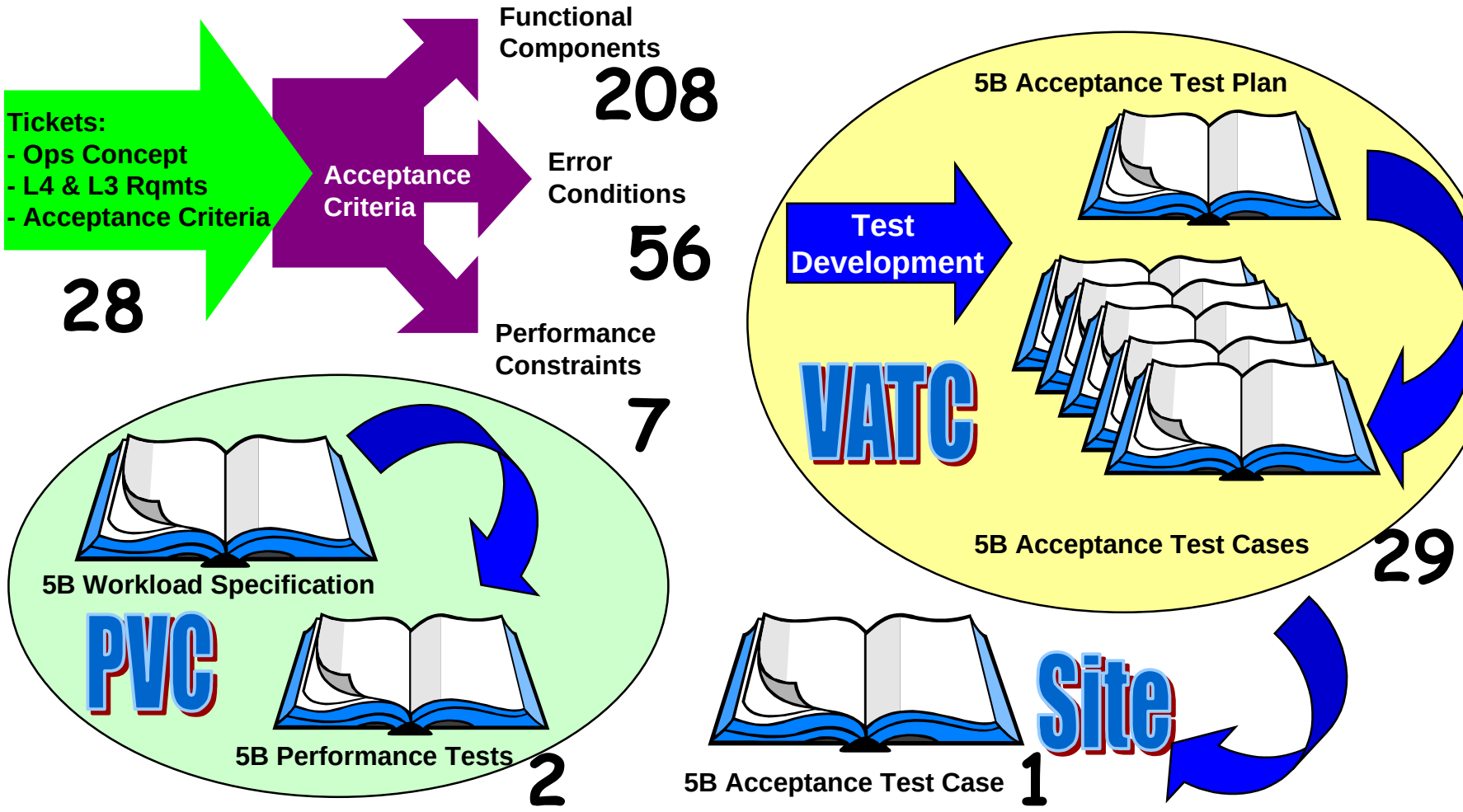
3 of 5 allocated performance-related criteria verified in PVC during EDC & GSFC performance/load testing

1 performance-related criterion verified in VATC testing

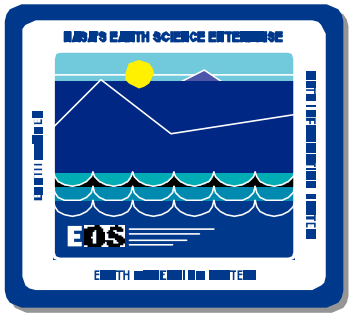
11 functional criteria, 1 error condition and 1 performance constraint will be verified by DAAC and ASTER Team after 5B Transition

Acceptance Testing Approach





Acceptance Testing
Criteria Verification Status



Test Case	Criteria Key																	Total	V	NT	NV
5B08020 - User Profile Enhancements	1433	1434	1435*	1436*														4	4		
5B08030 - SDSRV Recovery & Queuing Enhancements	1478	1479	1480															3	3		
5B08040 - Update ESDT	1498	1499	1500*	1501*	1502*	1503*	1506*	1507*	1508*	1504*	1505*	1496						12	12		
5B08060 - Generate Reports Using IQ/SQR Tools	1643	1644	1645	1646	1647	1648	1649	1650	1651	1652								10	10		
5B08070 - User Profile Replication - 5B	1785	1786	1787*	1788*	1789*	1790*	1791*	1783	1784	1792*	1793*	1794*						12	12		
5B09010 - Closest Granule & Min/Max Gran Prod Rule	1379	1380	1381	1382	1383	1384	1385*	1386*										8	8		
5B09020 - Spatial Pad Production Rule	1416	1417	1418	1419	1420	1421	1422*											7	7		
5B09030 - Orbit Proc Runtime Parameters Prod Rule	1569	1570	1571	1572	1573	1574	1575	1576	1577	1578	1579							11	11		
5B09040 - Orbit DPREP Processing for PM-1	1615	1616	1621*															3	3		
5B09050 - Ingest Cancel	1627	1628																2	2		
5B09060 - Ingest Database Data Type Verification	1625																	1	1		
5B09070 - Ingest Auto-Suspend/Cancel/Resume	1629	1630	1631	1632														4	4		
5B09100 - Thread-safe Version of SDP Toolkit	1425	1426	1427	1428	1429	1430	1431	1432										8	8		
5B09110 - C++ Version of SDP Toolkit	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448						12	12		
5B09120 - Toolkit Support for PM-1	1833	1834	1835															3	3		
5B10010 - LLBox	1481	1482	1488	1489	1490													5	5		
5B10015 - Oriented Polygon	1483	1484	1485	1486	1487													5	5		
5B10050 - Restricted Granule Access	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400*	1401*	1402*	1403*	17	17		
5B12020 - ASTER On-Demand Digital Elevation Model	1580	1581	1582	1583	1584	1585*	1586*	1587**										8	8		
5B12040 - ASTER Browse	1678	1679	1680	1681	1682*	1683*												6	6		
5B10020 - Persistent Queuing of Subscription Actions	1371	1372	1373	1375	1376	1377	1378	1374[X]										8	7		1
5B10060 - Landsat-7 Floating Scene Subsetting	1462	1465	1466	1468	1473*	1474*	1475*	1476*	1463	1469	1472*							11	8		3
5B12030 - ASTER On-Demand Higher-Level Products	1588	1589	1590	1591	1592	1593	1594	1595	1596	1597	1598	1600	1601	1602	1603	1604	1605	26	25		1
	1606	1607*	1608*	1609*	1610*	1611*	1612*	1613*	1599												
5B12010 - ASTER On-Demand (ASTER L1B)	1653	1654	1656	1657	1658	1659	1660	1661	1662	1663	1665*	1666*	1667*	1669*	1664	1655		16	16		
5B10030 - V0-ECS Gateway (Integ Browse & Enhance)	1423	1492	1493	1494	1491													5	4	1	
5B10090 - Configuration Registry	1670	1671	1672	1673	1674	1675	1676	1677	1858									9	8	1	
5B08050 - Landsat-7 Error Handling	1634	1635	1637	1638	1639	1640	1641*	1642*	1636									9	8	1	
5B08010 - Maintenance Tool Management (ASTER)	1539	1540	1541	1542	1543	1544	1546	1545										8	8		
5B10040 - ASTER Gateway	1551	1556	1557	1547	1548	1549	1550	1558	1559	1560	1562*	1563*	1565*	1566*	1552	1553	1554	20	14	5	1
	1555	1567*	1561*																		
Allocated to PVC Testing	1424**	1614**	1633**	1477**	1495**													5	3	1	1
																	Criteria Total:	258	242	9	7

* Error Conditions have an asterisk next to the Criteria Key ** Performance Constraints have a double asterisk

258 Criteria - VATC & PVC: V = 242 (93.8%) NT = 9 (3.5%) NV = 7 (2.7%)

Acceptance Testing
Criteria Verification Status

EDC Testing by ASTER Team

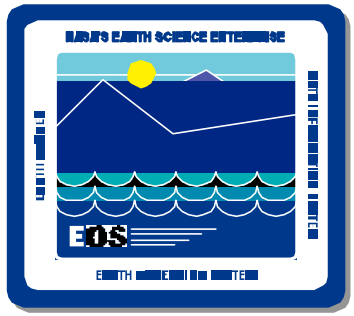
Test Case	Criteria Key																	Tot	V	NT	NV
Allocated to EDC Testing - Java DAR Tool	185	1404	1405	1406	1407	1408	1409	1410	1411	1413	1414*	1415**						12		12	
Allocated to EDC Testing - LPDS	1471																	1		1	
																	Criteria Total:	13	0	13	0

* Error Condition has an asterisk next to the Criteria Key

** Performance Constraint has a double asterisk next to the Criteria Key

13 Criteria - EDC/ASTER: V = 0 (0.0%) NT = 13 (100.0%) NV = 0 (0.0%)

Acceptance Testing Remaining Criteria

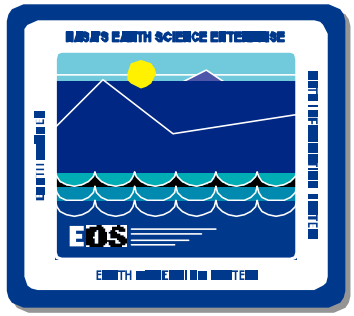


Crit Key	Crit status	Criteria Statement	Test Case Title	Ticket ID	NCR # (Sev)
1599	Not Verified	Verify that the MSS GUI can be used to perform the following functions: * display the on-demand orders for a given user and their status	ASTER On-Demand Higher Level Products	RM_5B_05	26208 (Sev 2)
1561	Not Verified	Shutdown a selected DAAC's V0 Gateway. Using the GDS Client simulator, send a search, product order, and browse request for products to the selected DAAC. Verify that an appropriate failure status is returned by the ASTGW and that the request failures are logged by the ASTGW. Verify that the request state is correctly recorded and observable via the MSS GUI at the SMC, and correctly returned when a status request is submitted from the GDS Client simulator.	ASTER Gateway	RM_5B_09	26645 (Sev 3)
1374	Not Verified	Insert a number of granules in rapid succession to trigger a very large number of acquire actions for several events. The number of granules inserted must be large enough to cause subscription actions to be queued. The total number of subscription actions must be large enough to allow testers to exercise an SBSRV fault before the subscription actions are worked off. Warm restart the SBSRV before all actions are complete. Verify that none of the triggered acquire actions are lost and that none of them are submitted more than once.	Persistent Queuing of Subscription Actions	RM_5B_02	25582 (Sev 3)
1463	Not Verified	From the V0 EDG Client (or a test driver simulating V0 protocols) submit separate orders for full band floating scene products of the following approximate sizes: a) < 1 scene (electronic) b) 3 scenes (tape) c) 5 scenes (electronic) d) 20 scenes e) whole subinterval (<10 scenes ñ tape) Verify that order completion notifications were received.	Landsat-7 Floating Scene Subsetting	SM_5B_02	26548 (Sev 3) 26679 (Sev 2)

Acceptance Testing Remaining Criteria

Crit Key	Crit status	Criteria Statement	Test Case Title	Ticket ID	NCR # (Sev)
1469	Not Verified	From the V0 EDG Client (or a test driver simulating V0 protocols) submit separate orders for band subsetted floating scene products as follows: a) Bands 1-6a b) Bands 6b-8 c) Bands 4 & 7 d) Band 8 only (ensure request covers at least 2 Band 8 data files) e) No Bands. For item a) - e) perform separate tests for spatial extents: i. < 1 scene ii. 3 scenes iii. 5 scenes iv. 20 scenes v. full subinterval Verify that order completion notifications were received.	Landsat-7 Floating Scene Subsetting	SM_5B_02	26548 (Sev 3) 26679 (Sev 2)
1472	Not Verified	From the V0 EDG Client (or a test driver simulating V0 protocols) attempt to submit an order for full band floating scene products of the following approximate size on tape a) 15 scenes. The attempt should fail as being too large to fit on a single media	Landsat-7 Floating Scene Subsetting	SM_5B_02	26548 (Sev 3) 26679 (Sev 2)
1495	Not Verified	Show that the system can provide response to search request against one ESDT by multiple attributes including a spatial search area based on a lat/long box within 8 seconds. The 8 seconds is in accordance with Table 7-1 of the F&PRS. The measured response period should cover the time from the receipt of the search request by the V0 Gateway to the time that the first byte of the result of the search is forward out of the V0 Gateway. The number of granules in the database for the ESDT should be 100K and the test should use a resultant set of one granule.	Allocated to PVC	RM_5B_08	

Acceptance Testing Remaining Criteria

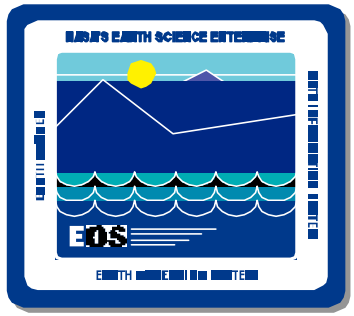


Crit Key	Crit status	Criteria Statement	Test Case Title	Ticket ID	NCR # (Sev)
1858	Not Tested	Bring up two registry servers on separate machines, but in the same mode. Then bring up an ECS server and verify it has read its configuration parameters correctly. Check the logs of the registry servers and kill the one that got the request from the ECS server. Bring up another ECS server and verify it has read its configuration parameters correctly.	Configuration Registry	HA_5B_01	
1636	Not Tested	Select a single subinterval format for which Subinterval merging has been successful, but scene merging is incomplete because one of the formats was too short. Ingest the subsidiary data and from the command line, initiate subsidiary subinterval and scene merging	Landsat-7 Error Handling	SM_5B_03	
1552	Not Tested	Using the GDS Client simulator, issue a product order for three Landsat 7 fixed scenes via 8 mm tape. Verify the following: * The orders are passed correctly via a simulated DORRAN interface to the DAAC's V0 Gateway for submission to the data server. * The orders are distributed with the priority specified in the user profile used. * The Distribution Notices are correctly sent. *The request states are correctly updated and observable via the MSS GUI that resides at the DAAC where the requested data is ordered. * The request states are correctly updated and observable via the MSS GUI at the SMC.	ASTER Gateway	RM_5B_09	

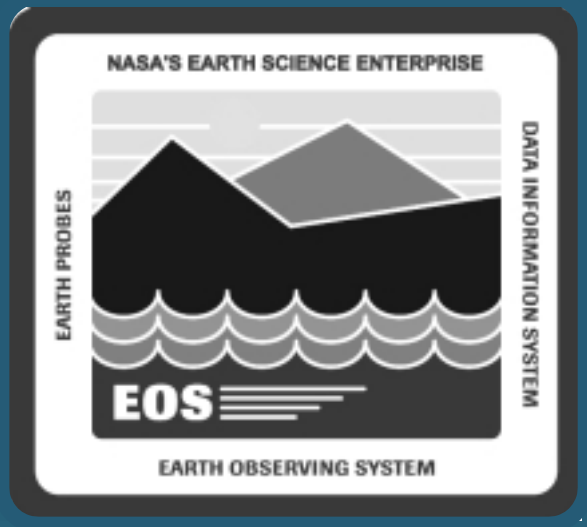
Acceptance Testing Remaining Criteria

Crit Key	Crit status	Criteria Statement	Test Case Title	Ticket ID	NCR # (Sev)
1553	Not Tested	Using the GDS Client simulator, issue an 8mm tape product order for a product other that Landsat 7. As the order is being processed, verify the following: * The request and order states are correctly updated and observable via the MSS GUI that resides at the DAAC where the requested data is archived. * The request states are correctly updated and observable via MSS GUI at the SMC.	ASTER Gateway	RM_5B_09	
1554	Not Tested	Using the GDS Client simulator, issue a product order that includes Landsat 7 scenes as well as MODIS products. The MODIS order should include an 8mm tape line item. As the order is being processed, verify that * There is only one order each generated at each DAAC. * The request and order states are correctly updated and observable via the MSS GUI that resides at the DAAC where the requested data is archived. * From the MSS GUI at the SMC verify that the local order reflects requests. * The states of the requests and order are correctly updated and are observable via the MSS GUI at the SMC. * The order IDs and request IDs that have been assigned include the DAAC identifier to make them ECS-wide unique. The Home DAAC has been correctly identified at both sites as being the SMC.	ASTER Gateway	RM_5B_09	
1555	Not Tested	Use the GDS Client simulator to obtain the status of the order status at various points during the processing cycle and verify that the status is correctly translated and transmitted by the ASTGW to the GDS simulator.	ASTER Gateway	RM_5B_09	

Acceptance Testing Remaining Criteria



Crit Key	Crit status	Criteria Statement	Test Case Title	Ticket ID	NCR # (Sev)
1567	Not Tested	Submit an order from the GDS Client simulator to the ASTGW while the Data Dictionary database is down. Verify that the ASTGW logs and returns an appropriate failure status.	ASTER Gateway	RM_5B_09	
1491	Not Tested	Use the EDG client to submit searches that include QA Attributes and other Core Metadata Attributes, as well as Product-Specific Attributes as part of the search criterion. The searches must observe the limits on the number of additional attributes that can be included in a search and that is imposed by the EDG client. Verify that: * QA Attributes can be included in the search criteria. * Other Core Metadata (beyond those covered by the basic V0 protocol) can be included in the search criteria. * PSA of type integer, string, and floating point can be included in the search criteria. * Verify that the searches return the correct results. * Verify that search conditions which do not match any granules in the inventory result in an empty result set.	V0-ECS Gateway (Integrated Browse and Enhancements)	RM_5B_08	
1477	Not Tested	Show that ECS can subset a daily volume of 110 scenes of Landsat 7 L0R data with the following breakdown: * 50 fixed WRS scenes * 60 equivalent floating subset scenes with 3 requests being for products at least 3 scenes in length plus 2 requests being for all scenes within the subinterval.	Allocated to PVC	SM_5B_02	

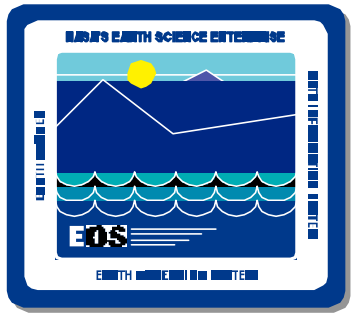


Performance Verification Lab

Skip Linehan

Raytheon

5B Performance Verification



Performance verification scope is full Terra ingest, production, and distribution

Performance verification is based on a workload specification for EDC and GSFC

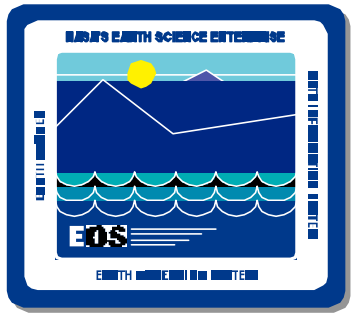
- **EDC contains major new capabilities (e.g. automated on-demand processing) and has highest ingest throughput**
- **GSFC has highest production and distribution throughput**
- **Release 5B verification constraints**
  - **No Origins will be used==> only one science processor and one archive configuration**
  - **simulated external interfaces**
  - **synthetic PGEs**
  - **175K granule inventory and 2.5 TB archive**

Performance Verification Center (PVC)

- DAAC-like suite of hardware
  - 2 spg (Challenge, *Origin*)
  - 2 silos (4 D3, 20 9840)
  - 2 drg (Challenge, *Origin*)
  - 2 acg (Challenge, *Origin*)
  - 1 wkg (Challenge)
  - 1 of everything else
  - 6 8mm stackers
  - Ext Intfc simulators(EDOS,LPS,MODAPS)
  - DAAC network topology (FDDI, HiPPI, *1000T*)
  - *EBNET connectivity*
- PVC lab for ops terminals
  - 5 SUNs, 30 X-terminals, 6 PCs
  - enough for three modes

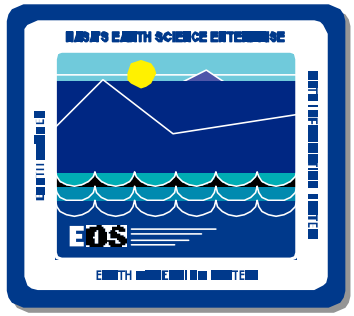
note: items in Itallics not used for 5B performance testing

TEST CONDUCT



- **All procedures were approved by ESDIS prior to formal testing.**
- **Tests were witnessed by ESDIS representatives and IVV.**
- **Testing was documented using established procedures.**
- **Formal Performance Testing of the EDC scenario occurred on April 24 and 25, 2000**
- **Formal Performance Testing of the GSFC scenario occurred on May 8 and 9, 2000**

5B Performance Verification Summary

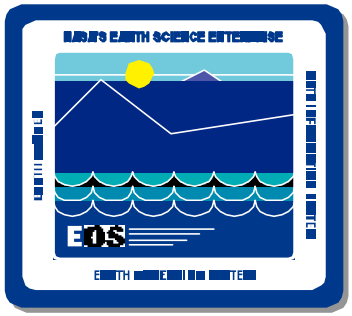


	GSFC*		EDC	
Area	% Workload Achieved	PVC Goal**	% Workload Achieved	PVC Goal**
Ingest	104%	100%	55%	70%
Production	90%	60%	110%	100%
Distribution	81%	50%	49%	50%
Search	157%	100%	100%	100%
Browse	134%	100%	100%	100%

***Unofficial results**

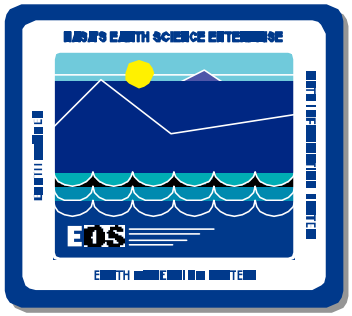
****Current PVC configuration (without Origin platforms) has 25% of the archive throughput and 50% of the science processor I/O throughput of GDAAC or EDAAC. Thus, the full 5B daily workload cannot be performed in 24 hrs**

GSFC SCENARIO DETAILED RESULTS



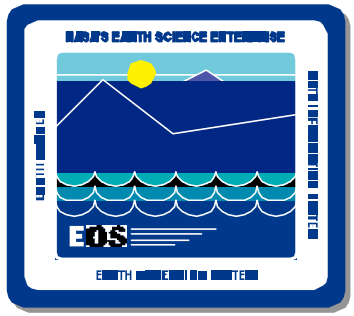
	REQUIREMENT		ACTUAL		Percent Achieved	
Ingest	**Granules**	**Gbytes**	**Granules**	**Gbytes**	**Granules %**	**Gbytes %**
AM1ANC	15	<1	18	<1	120	
AM1ATTF	15	<1	18	<1	120	
ANCILLARY	10	1	9	1	90	100
AST_EXP	39	2.4	44	2.5	113	104
DAO	24	2	36	2	150	100
MOD000	15	97.5	15	95.5	100	98
MODIS00_EXP (MOD000X)	39	2.4	41	3.7	105	154
MODIS_HL_BROWSE (Browse.001)	408	<1	553	<1	136	
MODIS_HL_PRODUCT (MOD04L_0)	1,805	69	2336	76.7	129	111
MODIS_HL_PROD_HIST (PH.001)	1,805	<1	2314	<1	128	
MODIS_HL_QA (QA.001)	192	<1	270	<1	141	
totals	**4367**	**174.3**	**5654**	**181.4**	**129**	**104**
Distribution	**Orders**	**Gbytes**	**Orders**	**Gbytes**	**Orders %**	**Gbytes %**
8mm	97	227.4	61	126	63	55
Ftp Pull	143	111.3	32	139	22	125
Ftp Push – AST_EXP	39	2.5	44	2.5	113	100
Ftp Push – MOD02OBC	360	21	321	18.2	89	87
Ftp Push – MOD021KM	360	96.6	321	84.2	89	87
Ftp Push – MOD02HKM	360	62	321	54	89	87
Ftp Push – MOD02QKM	360	62	321	54	89	87
Ftp Push – MOD03	360	22.9	(error in subscription)			
Ftp Push – MOD07_L2	360	10.3	311	8.7	86	84
Ftp Push – MOD35_L2	360	17.7	313	15	87	85
Ftp Push – MOD01	360	127	327	116.3	91	92
totals	**3159**	**760.7**	**2372**	**617.9**	**75**	**81**
DPRs	**Expected**		**Actual**		**DPRs %**	**Gbytes %**
DPREP-01	15	<1	18	<1	120	
DPREP-02	15	<1	19	<1	127	
MoPGE01	120	150	114	133.6	95	89
MoPGE02	359	236	321	212.6	89	90
MoPGE03	351	27	314	24.5	89	91
totals	**860**	**413**	**786**	**370.7**	**91**	**90**

EDC SCENARIO DETAILED RESULTS



	REQUIREMENT		ACTUAL		Percent Achieved	
Ingest	**Granules**	**Gbytes**	**Granules**	**Gbytes**	**Granules %**	**Gbytes %**
ASTER L1A	937	116	366	44.5	39	38
ASTER L1B	372	47	371	51.3	100	109
Ancillary	11	<1	5	<1	45	
ASTER L0 Expedited	39	3	35	2	90	67
L70R F1 & F2	84	168	87	87	104	52
MODIS High Level (MODAPS)	3718	185	1682	95.5	45	52
	Scenes		Scenes			
IGS Metadata/Browse	690	<2	82	3.7	12	
L70RWRS	336		192		57	
totals	**6187**	**519**	**2820**	**284**	**46**	**55**
Distribution	**Orders**	**Gbytes**	**Orders**	**Gbytes**	**Orders %**	**Gbytes %**
8mm – L70RWRS	20	10	9	4.5	45	45
8mm – ASTL1A	39	96.72	5	11.5	13	12
8mm – MOD09GHK	31	82.9	18	46.8	58	56
FTP Pull AST9	75	20.6	29	8	39	39
FTP Pull AST7	75	20.6	33	9	44	44
FTP Pull AST5	75	0.7	21	0.2	28	29
FTP Pull AST4	75	0.5	19	0.1	25	20
FTP Pull AST8	75	0.38	19	0.06	25	16
Ftp Pull – AST09T	75	1.17	66	0.9	88	77
Ftp Pull – ASTL1B	5	4.41	6	5.3	120	120
Ftp Pull – L70WRS	90	45	57	28.5	63	63
Ftp Push – ASTL1B	372	46.87	154	18.9	41	40
Ftp Push – MODIS	780	78	1208	67.35	155	86
totals	**1787**	**407.85**	**1644**	**201.11**	**92**	**49**
DPRs	**Expected**	**Gbytes**	**Actual**	**Gbytes**	**DPRs %**	**Gbytes %**
ASTER DST (routine)	372	40	421	7.2	113	18
ASTER ACVS (on demand)	75	36	141	76	188	211
ASTER ACT (on demand)	75	1	70	1	93	100
ASTER ETS (on demand)	75	2	141	2.9	188	145
ASTER BTS (on demand)	75	1	69	1	92	100
totals	**672**	**80**	**842**	**88.1**	**125**	**110**

PVC FINDINGS



Running a full 5B workload on a reduced configuration, enabled us to achieve higher request loads than are currently experienced at the DAACs

Duplicated 14 existing stability NCRs in the 5A baseline -- many of these problems were recreated in Landover for the first time!

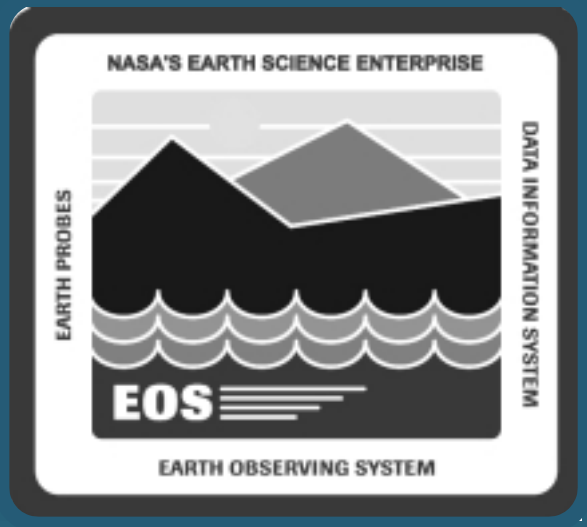
31 new NCRs written (6 Sev 1, 16 Sev 2, 9 Sev 3)

Overall, Release 5B system stability is comparable to Release 5A

Improvements seen in:

- **fewer cores**
- **8mm distribution stability and recovery**

Have demonstrated that PVC can provide an environment that will let us recreate and troubleshoot load-related problems

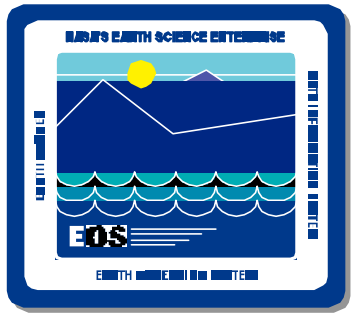


Non-Conformance Report Status

Randy Miller

Raytheon

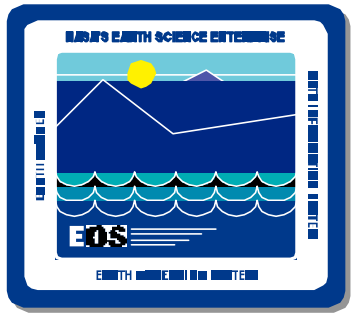
NCR Review Process For 5B CSR



NCRs in the RelB0_Informal Class Were Reviewed

- **This class includes NCRs that exist in the 5B software baseline (and 55 and 6A) but not in the 5A software baseline**
- **These NCRs have been written by Development and Test**
- **On 3/30, reviewed all Severity 1, 2, and 3 RelB0_Informal NCRs with ESDIS to verify severity**
- **On 5/8, reviewed all Severity 1, 2, and 3 RelB0_Informal NCRs with ESDIS written since 3/30 to verify severity**

5B NCRs -- Summary



Of forty-five Severity 1 and 2 NCRs in RelB0_Informal on 5/10/00 in the N/A/R/T states:

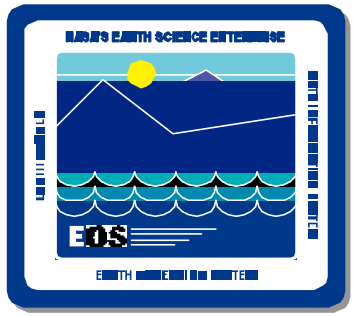
- **Two apply only to 55, 6A, or the EDF and do not impact 5B**
- **Twenty-seven are fixed and need to be verified**
  - **Twenty-one by Test**
  - **Six by Development**
- **Sixteen still require fixes**
  - **Two Severity 1s**
  - **Fourteen Severity 2s**

Open Severity 1 NCRs

26466 - Subscription Notifications Take Hours To Reach PDPS

- **Description: Some subscription notifications were observed to take hours to reach PDPS during the first run of the GSFC PVC test.**
- **Status: Not reproducible -- Problem was only observed during first GSFC PVC test; did not recur during EDC or second GSFC PVC tests.**
- **Impact: None -- Problem is not currently reproducible; will be closed if not reproduced before PSR.**

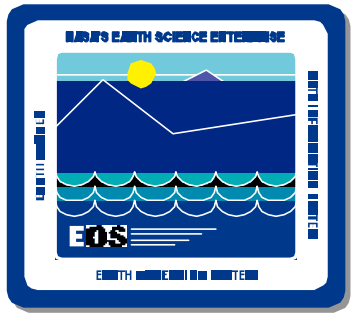
Open Severity 1 NCRs



26643 - SubsMgr: Cannot Release DPRs With Optional Inputs

- Description: The Subscription Manager does not release DPRs that have optional inputs.
- Status: In work; merge expected next week with delivery in 5B.03. Workaround is to use Subscription Manager from 5B.02 (problem was introduced in 5B.03-).
- Impact: None, after installing workaround.

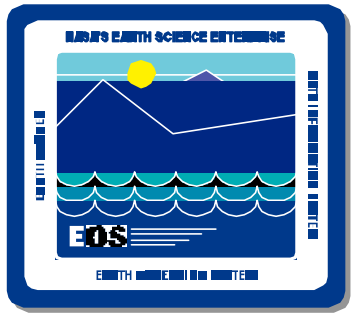
Open Severity 2 NCRs



The new Severity 2 NCRs can be divided into two categories:

- **NCRs against the new functionality provided in 5B (new stuff that doesn't quite work right yet), and**
- **NCRs against old functionality (stuff that we broke in building 5B)**

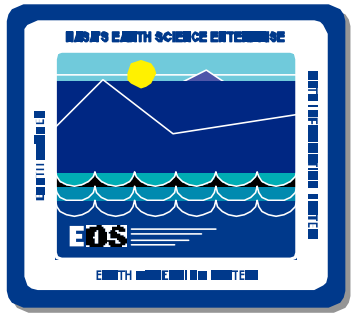
Open Severity 2 NCRs



NCRs against new functionality:

- **26027 - AsterToEcsGateway: Incorrect Status If V0GW Is Down For All Requests**
- **26028 - AsterToEcsGateway: No Status Comment On Mixed Inventory Search**
- **26234 - EcsToAsterGateway: Request ODL Not As Per ICD**
- **26445 - Set Packet Information Cost To $0.00 For Floating Scenes**
- **26208 - Order Tracking GUI: Does Not Search By Last/First Names For On Demand**

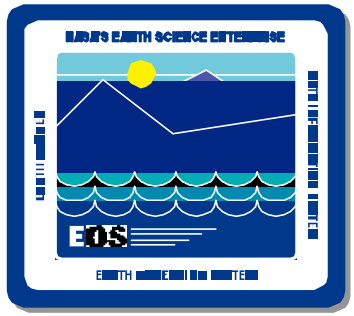
Open Severity 2 NCRs



NCRs against new functionality:

- **26042 - ASTER Routine Processing Non-Standard AST_L1B Granule Problem**
- **26679 - Subsetting Failed In Allocating Big Memory Blocks**
- **26701 - Error Handling Scripts Will Not Post Merge A Dataset**

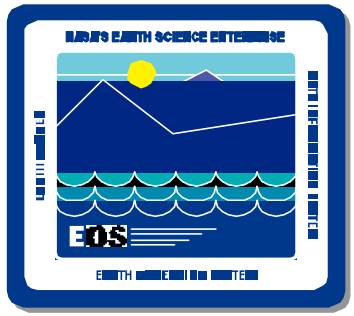
Open Severity 2 NCRs



NCRs against old functionality:

- **26172 - Input Granule Rename Failed During Insertion Time Controlled Run**
- **26281 - DPR Directories Remain On Science Processors**
- **26322 - DPREP: RepEph: Post Processing Misinterprets Exit Code**
- **26461 - Memory Leak In V0 ECS Gateway**
- **26642 - Subscription Server Core Dumps**
- **26609 - EcInGran Processes More Granules Than Its Threshold**

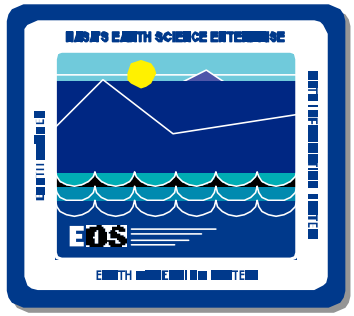
Work-Off Plans



The NCRs Introduced In The 5B Code Will Be Worked Off As Follows:

- **All NCRs in the RelB0_Informal class that pertain to 5B will be transferred to the OPERATIONS class**
- **These NCRs will be prioritized for work-off with other OPERATIONS class NCRs**
  - **Severity 1 NCRs will be fixed (in 5B.03) or mitigated by PSR**
  - **Severity 2 NCRs will be delivered in subsequent test executables or roll-up patches**
- **5B.03 will roll-up all current test executables and NCR merges through 5/31, along with all transition software**

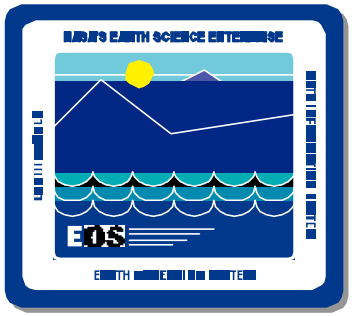
Summary



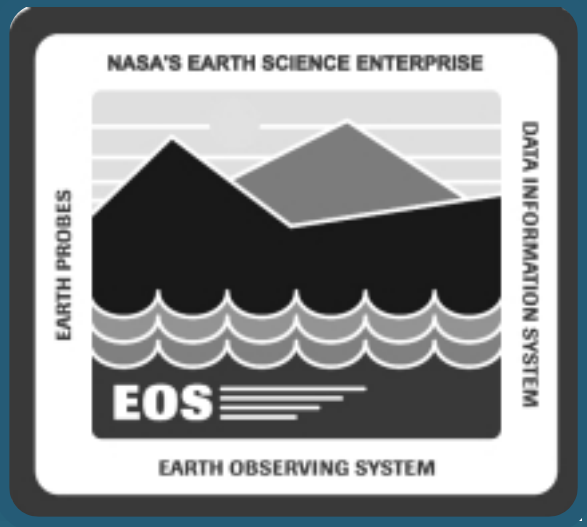
- **5B introduces two new Severity 1 NCRs; these will be fixed prior to the PSR.**

- **5B introduces fourteen new Severity 2 NCRs. None of these have critical consequences, and they may be prioritized below other problems already in the fielded 5A software; hence, they will be fixed and delivered based on priorities set by the Deployment IPT.**

Conclusion



- **Work on 5B should proceed with the development of transition software and procedures, with an acceptable PSR contingent upon fixing the open Severity 1 NCRs against 5B.**

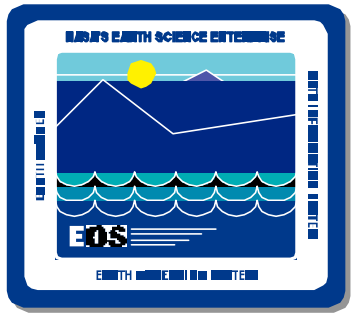


Liens Against 5B At CSR

Randy Miller

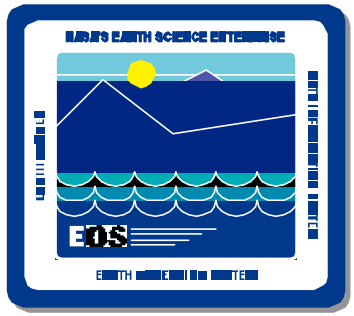
Raytheon

Liens Against 5B At CSR



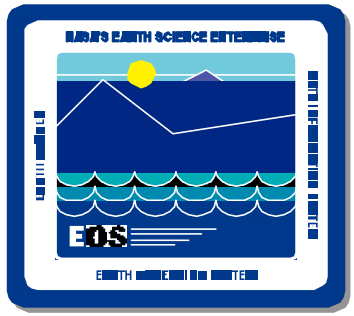
- Acceptance Test Liens
  - 7 Criteria Not Verified
  - 9 Criteria Not Tested
- NCRs
  - 2 Severity 1 NCRs
  - 14 Severity 2 NCRs
- Performance Shortfalls
  - EDC Ingest
- Conclusions

Acceptance Test Liens - Criteria Not Verified



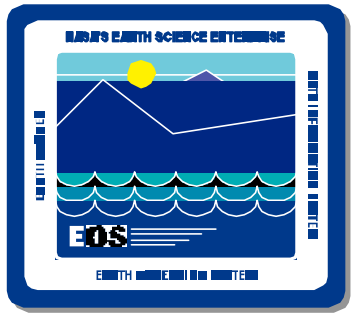
- **Criterion 1599: Verify that the MSS GUI can be used to perform the following function: display the on-demand orders for a given user and their status.**
- **NCR 26208: Order Tracking GUI: Does Not Search By Last/First Names For On Demand (Severity 2; not reproducible to date)**
- **Impact: Minor. The Order Tracking GUI is not able to query by user for On-Demand Request orders, but can query by other criteria.**

Acceptance Test Liens - Criteria Not Verified



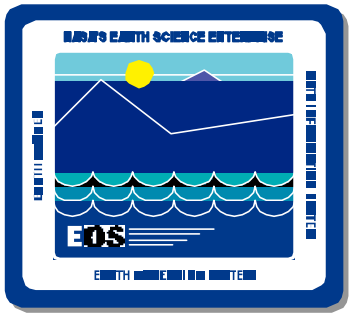
- **Criterion 1561: Shut down a selected DAAC's V0 Gateway. Using the GDS Client simulator, send a search, product order, and browse request for products to the selected DAAC. Verify that an appropriate failure status is returned by the ASTGW and that the request failures are logged by the ASTGW. Verify that the request state is correctly recorded and observable via the MSS GUI at the SMC, and correctly returned when a status request is submitted from the GDS Client simulator.**
- **NCR 26645: Inappropriate Error Messages Logged In The AsterGateway Log (Severity 3)**
- **Impact: Minor. The logs indicate a possible problem, but also include a message indicating that all browse results have been returned.**

Acceptance Test Liens - Criteria Not Verified



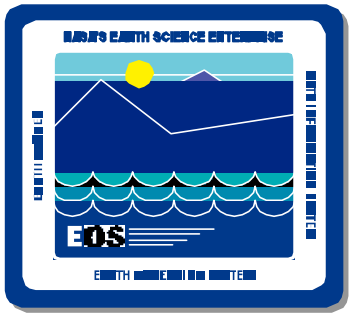
- **Criterion 1374: Insert a number of granules in rapid succession to trigger a very large number of acquire actions for several events . . . The total number of subscription actions must be large enough to allow testers to exercise an SBSRV fault before the subscription actions are worked off. Warm restart the SBSRV before all actions are complete. Verify that none of the triggered acquire actions are lost and that none of them are submitted more than once.**
- **NCR 25582: Duplicate Email Notifications When Warm Restart Subscription Server (Severity 3)**
- **Impact: Minor. In the event of a fault, some users may receive two notifications for the same event.**

Acceptance Test Liens - Criteria Not Verified



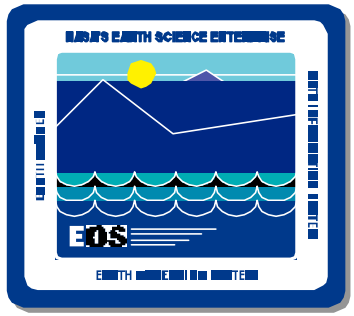
- **Criterion 1463: From the V0 EDG Client (or a test driver simulating V0 protocols) submit separate orders for full band floating scene products of the following approximate sizes: a) < 1 scene (electronic); b) 3 scenes (tape); c) 5 scenes (electronic); d) 20 scenes; e) whole subinterval (<10 scenes) (tape). Verify that order completion notifications were received.**
- **NCR 26679 - Subsetting Failed In Allocating Big Memory Blocks (Severity 2)**
- **Impact: Minor. The V0 Gateway can be configured to constrain the request size to a number of scenes that can currently be handled until NCR 26679 is fixed or ECS transitions to Irix 6.5, where the problem no longer occurs.**

Acceptance Test Liens - Criteria Not Verified



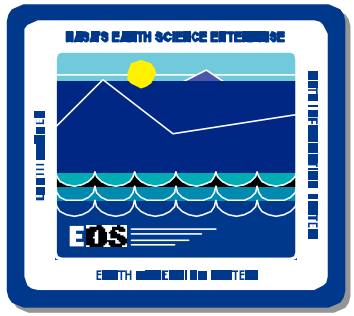
- **Criterion 1469: From the V0 EDG Client (or a test driver simulating V0 protocols) submit separate orders for band subsetted floating scene products as follows: a) Bands 1-6a; b) Bands 6b-8; c) Bands 4 & 7; d) Band 8 only (ensure request covers at least 2 Band 8 data files); and e) No Bands. For item a) - e) perform separate tests for spatial extents: i. < 1 scene; ii. 3 scenes; iii. 5 scenes; iv. 20 scenes; and v. full subinterval. Verify that order completion notifications were received.**
- **NCR 26679 - Subsetting Failed In Allocating Big Memory Blocks (Severity 2)**
- **Impact: Minor. The V0 Gateway can be configured to constrain the request size to a number of scenes that can currently be handled until NCR 26679 is fixed or ECS transitions to Irix 6.5, where the problem no longer occurs.**

Acceptance Test Liens - Criteria Not Verified



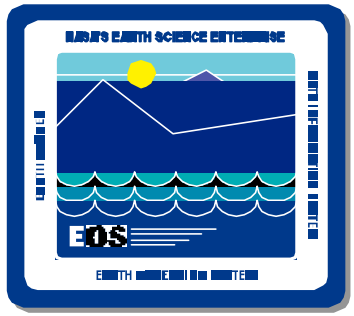
- **Criterion 1472: From the V0 EDG Client (or a test driver simulating V0 protocols) attempt to submit an order for full band floating scene products of the following approximate size on tape: a) 15 scenes. The attempt should fail as being too large to fit on a single media.**
- **NCR 26679 - Subsetting Failed In Allocating Big Memory Blocks (Severity 2)**
- **Impact: Minor. The V0 Gateway can be configured to constrain the request size to a number of scenes that can currently be handled until NCR 26679 is fixed or ECS transitions to Irix 6.5, where the problem no longer occurs.**

Acceptance Test Liens - Criteria Not Verified



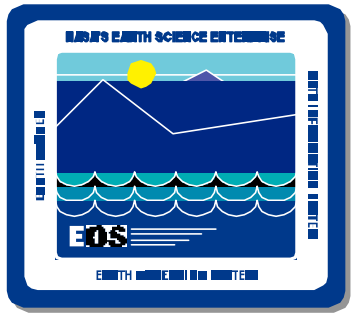
- **Criterion 1495: Show that the system can provide response to search request against one ESDT by multiple attributes including a spatial search area based on a lat/long box within 8 seconds. The 8 seconds is in accordance with Table 7-1 of the F&PRS. The measured response period should cover the time from the receipt of the search request by the V0 Gateway to the time that the first byte of the result of the search is forward out of the V0 Gateway. The number of granules in the database for the ESDT should be 100K and the test should use a resultant set of one granule.**
- **No NCR - No valid test data collected.**
- **Impact: None. System may meet requirement; valid test data has not yet been collected. Criterion will be re-allocated to 6A, which will deliver performance enhancements.**

Acceptance Test Liens - Criteria Not Tested



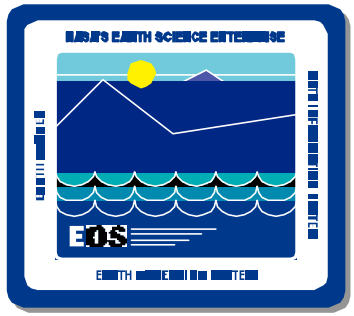
- **Criterion 1858: Bring up two registry servers on separate machines, but in the same mode. Then bring up an ECS server and verify it has read its configuration parameters correctly. Check the logs of the registry servers and kill the one that got the request from the ECS server. Bring up another ECS server and verify it has read its configuration parameters correctly.**
- **This criterion was overlooked until late in 5B development, and was not included in the initial Registry test plans.**
- **Risk/Impact: None. The current implementation is believed to satisfy the criterion. This capability is unlikely to be used in the field.**

Acceptance Test Liens - Criteria Not Tested



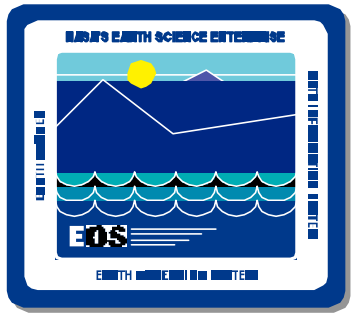
- **Criterion 1636: Select a single subinterval format for which Subinterval merging has been successful, but scene merging is incomplete because one of the formats was too short. Ingest the subsidiary data and from the command line, initiate subsidiary subinterval and scene merging.**
- **Testing of this criterion was held up by the need for special data.**
- **Risk/Impact: Low. The frequency of this use case is believed to be low.**

Acceptance Test Liens - Criteria Not Tested



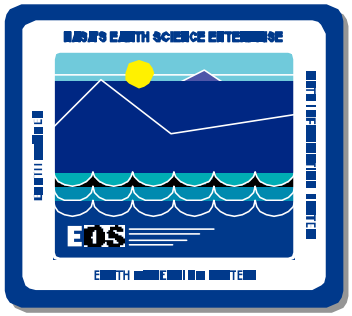
- **Criterion 1552-1555, 1567: Using the GDS Client simulator, issue a product order . . .**
- **Testing of these criteria were held up by the need for multiple modes.**
- **Risk/Impact: Low. The current implementation is believed to satisfy the criteria.**

Acceptance Test Liens - Criteria Not Tested



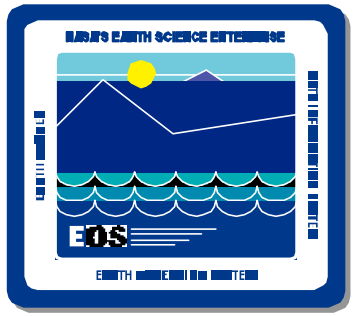
- **Criterion 1491: Use the EDG client to submit searches that include QA Attributes and other Core Metadata Attributes, as well as Product-Specific Attributes as part of the search criterion.**
- **Blocked by NCR 26055: No Prompt For Entering Version ID. (Severity 3; note that this defect is actually in EDG)**
- **Risk/Impact: None. Cannot search by Version Identifier, but other searches work.**

Acceptance Test Liens - Criteria Not Tested



- **Criterion 1477: Show that ECS can subset a daily volume of 110 scenes of Landsat 7 L0R data with the following breakdown: 50 fixed WRS scenes and 60 equivalent floating subset scenes with 3 requests being for products at least 3 scenes in length plus 2 requests being for all scenes within the subinterval.**
- **A version of EDG that supported Floating Scene requests was not available in time to incorporate testing for this capability into the 5B PVC testing.**
- **Risk/Impact: Low. floating scene requests are less resource intensive than fixed scene requests, so this combination of requests should produce less load than a full load of fixed scenes, which has been tested before.**

Performance Shortfalls



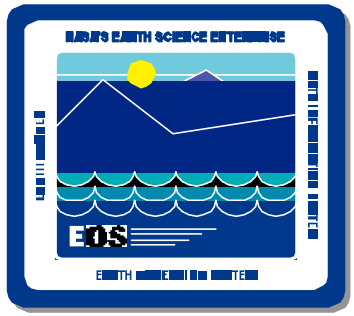
GSFC -

- **All performance goals for the GSFC PVC test were met**

EDC -

- **<u>Ingest</u>: The causes of the shortfalls have been diagnosed and corrected. Re-testing of the EDC ingest load in the PVC is underway, and success is expected.**
- **<u>Distribution</u>: The distribution shortfall was largely driven by the ingest shortfall (products were unavailable to distribute). The distribution performance exhibited in the second GSFC test (over 600 GB of distribution) exceeds the EDC requirement and demonstrates that 5B distribution is robust.**

Summary And Conclusions



Functionality -

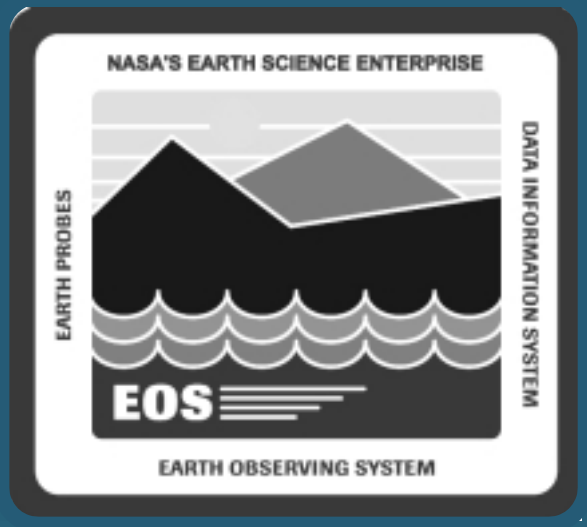
- **All capabilities in 5A continue to work in 5B, except as noted in the NCR Status briefing**
- **5B provides significant new functionality**

Stability -

- **5B is at least as stable as 5A.05 (plus test executables)**

Performance -

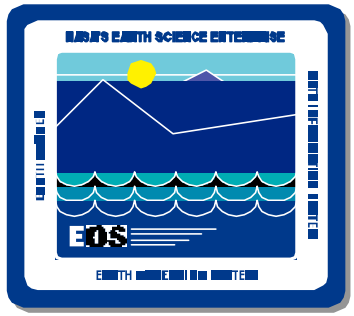
- **PVC testing has not identified any performance problems not found in 5A**
- **PVC testing to date has confirmed that 5B meets its performance goals in all areas except EDC ingest, which is being re-tested**



Post-CSR Installation & Transition

Howard Ausden/Ravi Nirgudkar

Agenda



Overview

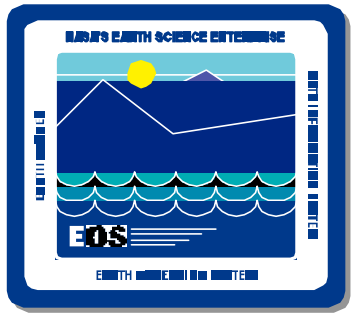
Three major transitions between 5B CSR and 6A CSR: Sybase ASE, 5A to 5B, 5B to 55

- **Description**
- **Pre-requisite**
- **Deployment Approach**
- **Documentation**
- **Transition Support**

COTS Upgrades

Consolidated Schedule

Sybase ASE Transition



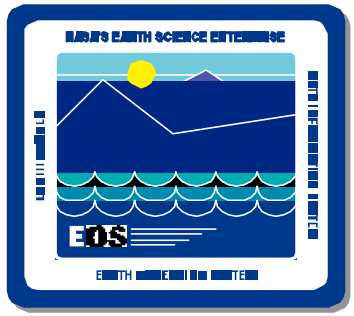
Sybase ASE transition

- Sybase ASE server upgrade from 11.0.3 to 11.5.1
- Sybase ASE PSR on 05/26/00

Pre-requisite

- 5A.05 installed in all the modes. Sybase ASE 11.5.1 requires Sybase OC 11.1.1 which is statically linked with custom code 5A.05

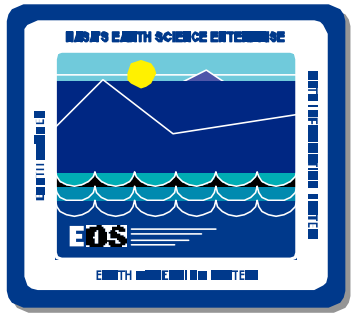
Sybase ASE Transition



Deployment Approach

- Sybase ASE will be installed on RAID with the databases
  - previously, SQL Server was on both primary and secondary
- Existing databases will be upgraded to ASE in place
- No additional disk will be required
- Minimal change to the DBA scripts and DAAC unique scripts
- Only one installation of Sybase ASE per pair of primary and secondary servers
- Cannot be tested in Test modes prior to the OPS mode
- Roll back is possible, however, time consuming
  - restore databases and system tables from backups
  - restore 11.0.3.3 servers, if removed

Sybase ASE Transition



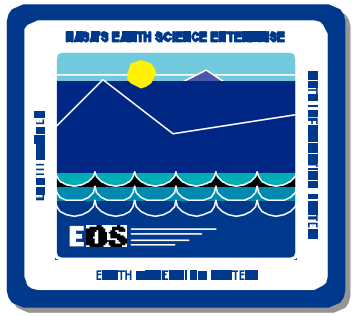
Documentation

- Sybase ASE PSR document
- Sybase ASE Transition document 211-TP-005-004

Transition Support

- ECS Landover will provide remote support during the transition

5A to 5B Transition



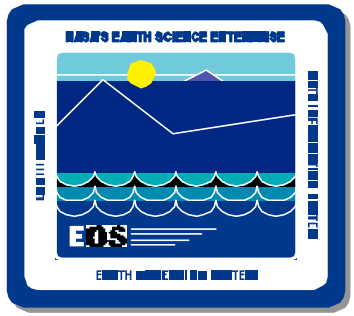
5A to 5B transition

- 5B functional and performance requirements
- Increased level of automation using ECS Assistant
- Improved level of management of the configuration parameters using Configuration Registry

Pre-requisite

- Sybase ASE installed in all the modes
- All the necessary COTS installed in all the modes

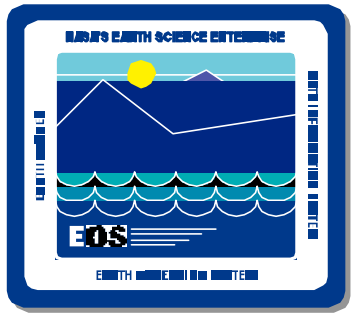
5A to 5B Transition



Deployment Approach

- Transition will be from 5A.05 to 5B.03
  - Quiesce the system
  - Backup software/databases/configuration for rollback
  - Shutdown the system
  - Using ECS assist install the software on a clean system (except for persistent data)
  - Convert the system databases
  - Restart the system
  - Checkout installation
  - Re-enable Operational data inputs
  - Rehearse/train in VATC, and in TS2 and TS1 at the DAACs
- No shared mode impact

5A to 5B Transition



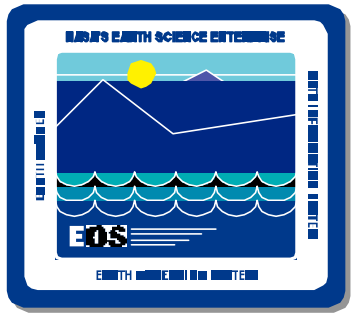
Documentation

- Transition Plan 5A to 5B for the ECS Project,
  # 840N4-TP-005-005
- Installation instructions
- Transition Guide 5A to 5B

Transition Training and Support

- ECS, Landover will provide training, in VATC, to EDC and GSFC personnel
- EDC will train and support the transition at NSIDC
- GSFC will train and support the transition at LaRC
- Configuration Registry and Sybase Replication should be turned ON in all the modes right after 5B transition i.e. before 5B to 55 transition

5B to 55 Transition



5B to 55 transition

- **OS upgrade on the SGI machines from IRIX 6.2 to IRIX 6.5.6**
- **Integrate the SGI Origin machines with the rest of the system**

Pre-requisite

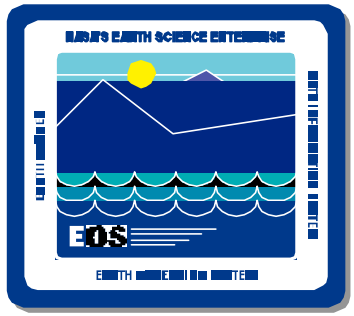
- **5B custom code installed in all the modes**
- **All the necessary COTS installed in all the modes**

5B to 55 Transition

Deployment Approach

- Transition will be from 5B.03 to 5B.04 (55)
- Transition approach
  - Release 55 will be installed and tested on substitute machines while operations continue
  - After testing is complete, operations are cut over to the substitute machine by copying over persistent data
  - After operations have been successfully resumed on the substitute machine, the original machine is removed from the baseline
- No shared mode impact

5B to 55 Transition



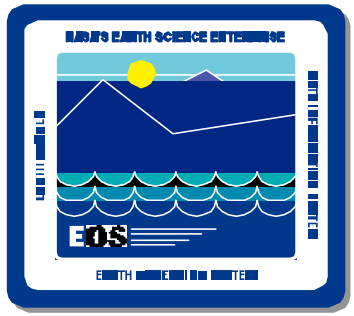
Documentation

- Operating System Upgrade Plan for SGI Machines in ECS, 223-WP-001-002
- Installation instructions
- Regression procedures

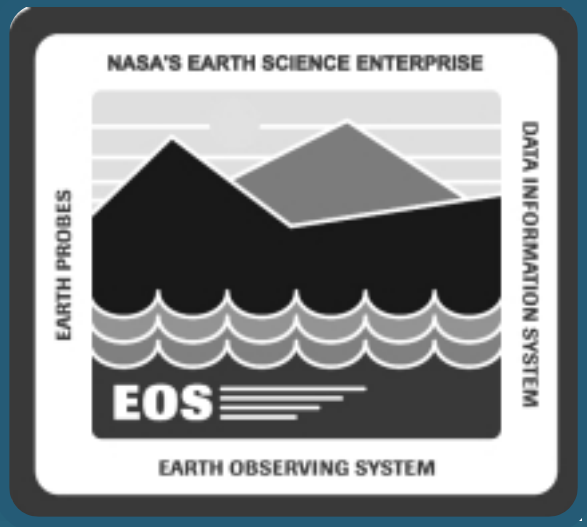
Transition Training and Support

- ECS, Landover will provide training, in VATC, for all DAACs
- A cluster of SGI machines has been added to VATC to support the transition testing and training
- ECS, Landover will provide on-site support for all DAACs except EDC during the transition.

Consolidated Current Schedule



	Milestone	VATC training	EDC	GSFC	NSIDC	LaRC
5A.05	5A.05 PSR 04/18/2000	N/A	04/18 to 05/26	04/18 to 05/26	04/18 to 05/26	04/18 to 05/26
Sybase ASE 11.5.1	Sybase PSR 05/26/2000	N/A	05/26 to 06/15	05/26 to 06/15	05/26 to 06/15	05/26 to 06/15
5A to 5B Transition	5B CSR 05/11/2000 5B PSR 06/22/2000	06/22 to 07/07	06/29 to 07/28	07/10 to 08/04	07/31 to 08/21	08/07 to 09/11
5B to 55 Transition	55 PSR 07/26/2000	08/11 to 08/29	10/18 to 01/11	08/30 to 10/11	09/06 to 10/17	10/12 to 11/22

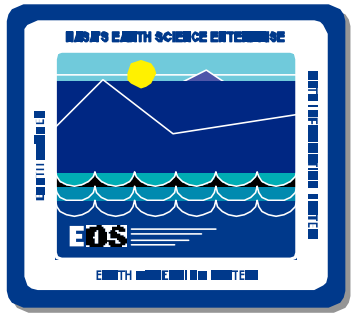


M&O
ECS Support to Site Readiness

Lonney Head

Raytheon

ECS Support to Site Readiness



Training

5B COTS Upgrade Status

Training

Training

- **Documentation**

  -**DID 625 Training Materials available 7 April 2000**

  -**DID 611 Operations Procedures available 7 April 2000**

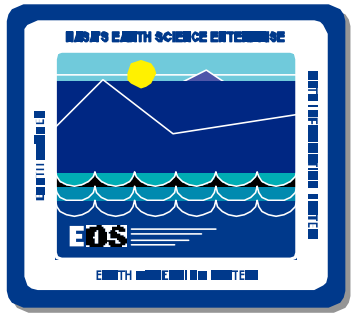
  -**M&O Technical Bulletin (TB) process in place for early deployment of DID 611 updates**

- **Training Conduct**

  -**Significant 5B operability changes will be communicated to the DAACs**

  -**Currently working training schedule issues with the DAACs**

Training



Major Course Changes

- Internals (Numerous Changes)
- System Administration
  - Tivoli
  - System Software Server Failover/Dependencies
- Configuration Management
  - Configuration Registry (New)
- User services
  - Replication Server (New)
  - Java DAR Tool (New) (EDC)
  - On-Demand Product Requests (New) (EDC)
- Resource Planning
  - Tuning System Parameters
  - Defining Resources
- System Troubleshooting
  - Configuration Parameters (New)
  - Recovery from problems with submission of a DAR (New) (EDC)
- Production Planning and Processing
  - Resetting/Cleaning the PDPS Database (New)
  - Launching Production Request Editor
  - Troubleshooting Production Planning Problems
  - Modifying Job Status
  - Tuning System Parameters
  - Troubleshooting Processing Problems

Training

Major Course Changes

- Ingest
  - Cleaning Directories (New)
  - Modifying Ingest Tunable Parameters and Performing File Transfers
  - Monitoring Ingest Status
- Data Distribution
  - Modifying Preambles (New)
  - Deleting files from Cache and setting Cache Thresholds (New)
  - Tuning System Parameters (New)

Minor Course Changes

- Network Administration
- Database Administration
- Problem Management
- Archive
- Advanced Production Planning and Processing
- SSIT

5B COTS Upgrade Status

COTS UPGRADES REQUIRED - 5A TO 5B TRANSITION	PSR DATE	SMC	LARC	NSIDC	EDC	GSFC
COTS that are upgraded for reasons other than OS upgrade						
Tivoli 3.6	1/6/00	X	X	X	X	X
IQ/SQR Server 4.3.4	2/10/00	X	TBS	X	N/A	X
HP Open View 6.0	4/28/00	X	TBS	TBS	5/12/00	X
Sybase Replication Server 11.5.1	2/24/00	X	TBS	TBS	X	X
Sybase Central 3.0.0	2/24/00	X	TBS	X	X	X
Java 1.2	4/28/00	N/A	N/A	N/A	X	N/A
Fortran 77 v4.2	4/06/00	X	X	X	X	5/24/00
AMASS 4.10.2 Rev 52	3/08/00	N/A	X	X	X	X
Secure Shell 1.3.6 & 2.0.12	5/04/00	TBS	TBS	TBS	TBS	TBS
Patches:						
SGI O/S Security and Y2K Patches	2/04/00	N/A	X	X	X	X
HP O/S Security, Y2K patches and HP crontab	2/23/00	X	X	X	X	X
Sun OS Security Patch	7/10/00	TBS	TBS	TBS	TBS	TBS
Sun DCE Patch 49	4/04/00	X	X	X	X	X

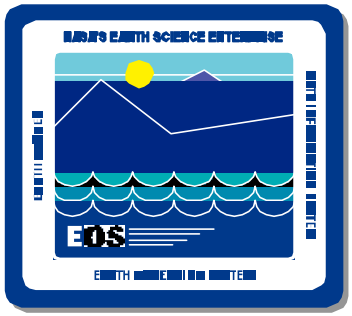
TBS - To Be Scheduled N/A - Not Applicable X - Installed

5B COTS Upgrade Status (Cont)

COTS UPGRADES REQUIRED - 5A TO 5B TRANSITION	PSR DATE	SMC	LARC	NSIDC	EDC	GSFC
COTS that are upgraded due to OS upgrade but can be upgraded before OS upgrade						
Netscape Communicator 4.7	4/28/00	X	TBS	TBS	X	TBS
Purify 4.5.1 (Sun)	4/06/00	X	X	X	X	X
Visual Workshop 3.0	4/06/00	X	X	X	X	5/24/00
Perl 5.005-03	3/30/00	X	X	5/5/00	X	5/24/00
Additional FLEXlm servers	N/A	N/A	TBS	N/A	TBS	N/A
COTS that should be upgraded with custom code release 5B						
Sybase Adaptive Server 11.5.1	5/25/00	X	TBS	5/26/00	6/16/00	TBS
Sybase Open Client 11.1.1 (Sun)	4/13/00	X	X	X	X	X
Statically linked with 5B (comes with 5B Custom Code)	***For DAAC information only***					
HDF 4.1r3	5B					
Rogue Wave:	5B					
DB Tools.h++ 3.1.4	5B					
Tools.h++ 7.0.b	5B					
Tools Pro 1.02	5B					

TBS - To Be Scheduled N/A - Not Applicable X - Installed

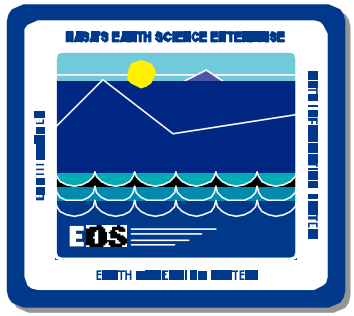
5B COTS Upgrade Status (Cont)



COTS UPGRADES REQUIRED - 5B TO 55 TRANSITION	PSR DATE	SMC	LARC	NSIDC	EDC	GSFC
COTS that should be upgraded or rebuilt with OS upgrade (release 55)						
IRIX 6.5.6 / DCE 1.2.2a	TBS					
Flare Code 9.56.03	TBS					
AMASS 4.12	TBS					
BDS 2.1 / HiPPI SW 3.3.1	TBS					
IDL 5.3	7/10/00					
Legato 5.5.2	TBS					
Purify 4.5 (SGI)	TBS					
Sybase OC 12.0 (SGI)	TBS					
IMSL 3.01 / 4.01	7/10/00					
Rebuilt on IRIX 6.5						
Perl 5.005-03	TBS					
Tool Command Language (Tcl) ToolKit (Tk) 8.0 Patch Level 4	8/05/99					
TCP Wrappers 7.6	5/18/00					
Tripwire 1.3	TBS					
HDF4.1r3	TBS					
Secure Shell 1.3.6 & 2.0.12	5/18/00					

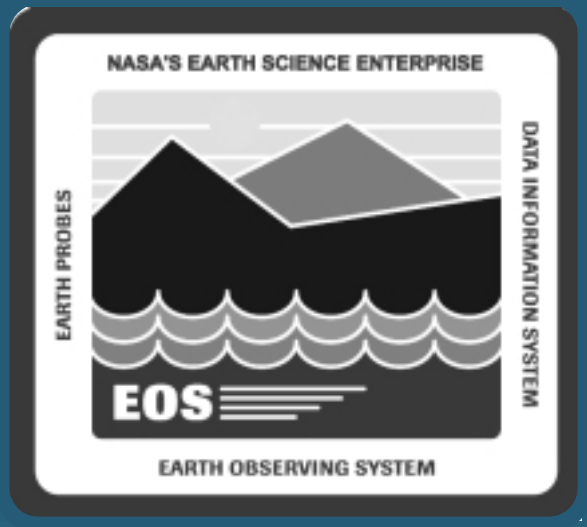
TBS - To Be Scheduled N/A - Not Applicable X - Installed

Workaround Status



Status of Workarounds

- **Manual Workarounds being replaced**
  - **ASTER On-Demand Processing**
  - **Update ESDT Process**
- **M&O Knowledge Base Tool**
  - **Workaround database prototype tool**
  - **Demo scheduled for May 15, 2000**

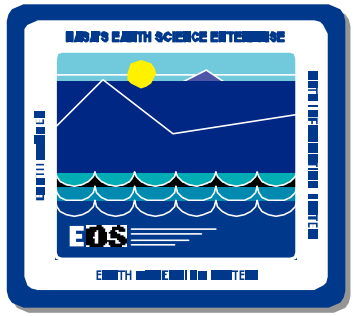


Functional Configuration Audit

Joe Spyrison

Raytheon

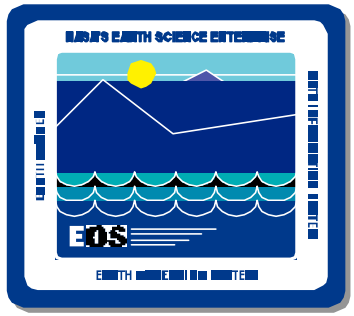
FCA Objectives



Confirm

- **ECS criteria verification status is correct, substantiated, and traceable to VDB**
- **Approved 5B Ticket criteria are mapped to approved 5B test cases**
- **NCRs created or encountered during test execution are properly accounted for in DDTS**
- **Test completion status is correct and substantiated by complete test records**

FCA Scope and Process

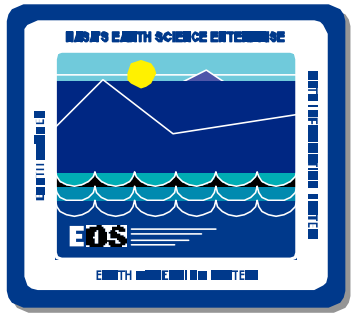


Scope- 14 5B test folders audited for Functional Components (FC) and Error Conditions (EC)

Process-

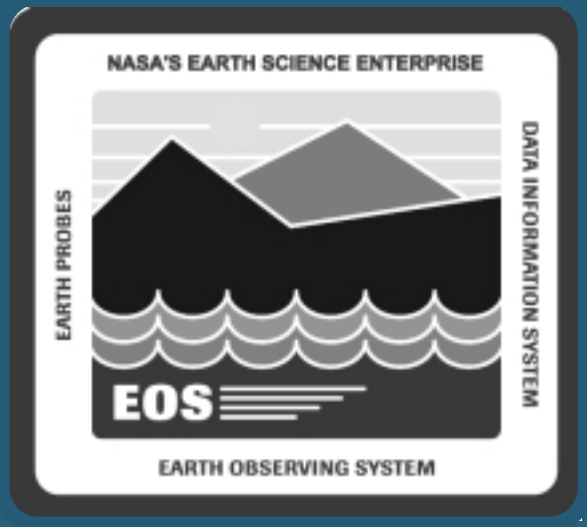
- **ECS QA audit team**
- **Reviewed formal test folders, original artifacts, reports, VDB, and recorded deficiencies as QA DRs**
- **Traced from original site test records to VDB**

FCA Results and Conclusions



Results and Conclusions

- All criteria verification status audited is confirmed as correct. VDB criteria verification status is accurate
- All verification or NCR questions researched and resolved
- No criteria mapping or Ticket findings
- Other test folder documentation deficiencies have been documented as QA DRs, and are resolved or in process
- ECS Test Engineering continues to improve
- FCA objectives have been achieved

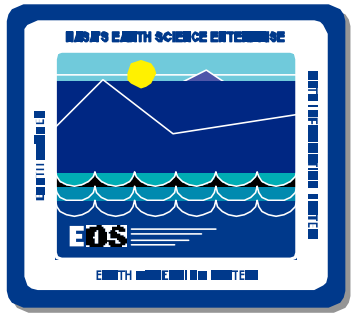


CDRL Documentation Summary

Joe Spyrison

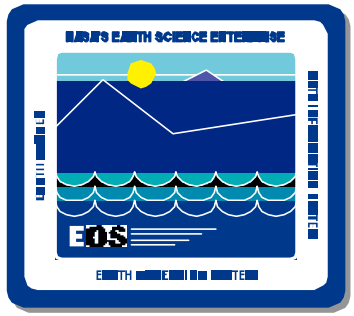
Raytheon

System Design Documents



DID#	Document Title	Delivery Date
305/DV3 (P)#	Segment/Design Specifications	3/30/00 Delivered
311/DV1#	Database Design and Database Schema Specification	3/30/00 Delivered
313/DV3 (P)#	ECS Internal ICDs	3/30/00 Delivered
609/OP1#	Operations Tools Manual	4/7/00 Delivered

System Test Documents



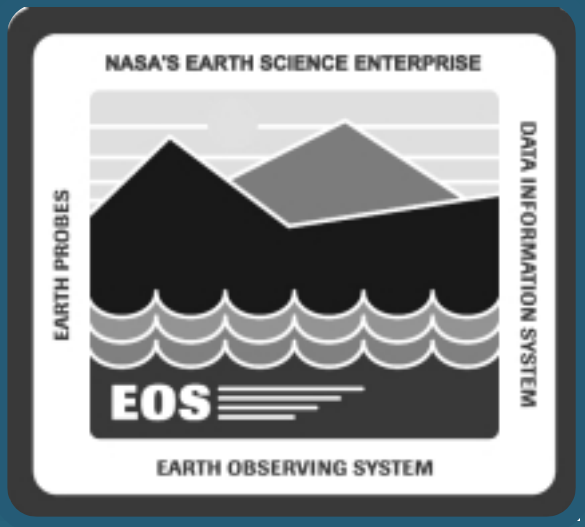
DID#	Document Title	Delivery Date
409/VE1#	ECS Science Acceptance Test Plan	http://dmserver.gsfc.nasa.gov/cm/ * 10/13/99
411/VE1#	ECS Science Acceptance Test Procedures	http://dmserver.gsfc.nasa.gov/cm/ * 4/10/00 Posted to Web
412/VE2#	ECS Science Acceptance Test Report	http://dmserver.gsfc.nasa.gov/cm/ * Prelim CSR + 15 Days Final SRA +15 Days
535/PA1#	Acceptance Data Package	SRA + 30 Days

Note: * Electronic Delivery

Ops Management/Support Documents

DID/TP#	Document Title	Delivery Date
506/PA3#	Configuration Audits of the Science Data Processing Segment, Release 5B	SRA + 30 Days
611/Ops#	Mission Operations Procedures	4/21/00 Delivered
625/OP3#	Training Material	http://dmserver.gsfc.nasa.gov/cm/ * 4/14/00 Delivered
714/PP3#	CSR Presentation Package	CSR + 2 Weeks

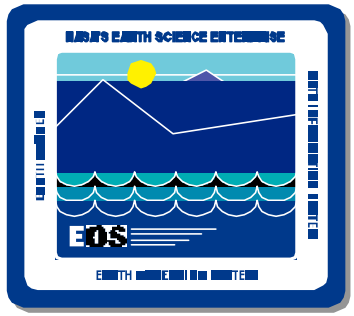
Note: * Electronic Delivery



Physical Configuration Audit (PCA)

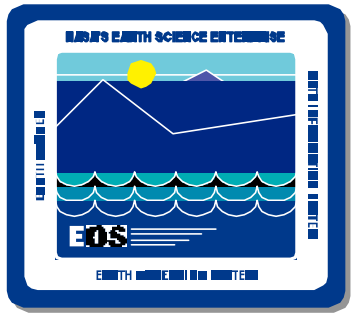
Felicia Harris

Agenda



- 5B PCA Status of Activities
- Documentation of Findings
- Results VATC
- VATC Workoff Plan
- Results PVC
- PVC Workoff Plan
- PCA Summary

5B PCA Status of Activities

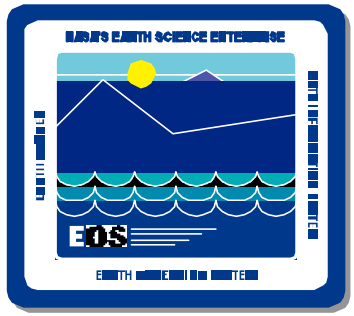


- **VATC and PVC**
  - **Audit Findings are documented as NCRs**

    -High/Medium severity NCRs are addressed right away to ensure the integrity of the system

    -Low severity NCRs are documented and assigned to make corrections to baseline documentation
- **Workoff Plan**
  - **Verify the closure of the low severity NCRs by reviewing the updated baseline documentation to ensure it reflects the configuration of the system**

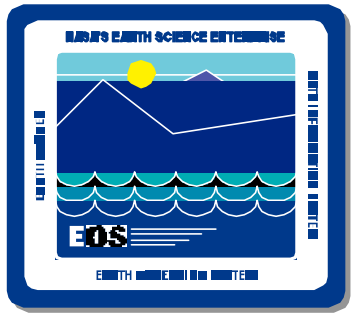
Documentation of Findings



- **NCR classification recognized by the following distinction:**
  - **Class Severity Definition**
  - **1 High Critical product. All work ceases until baseline installed; correction mandatory.**
  - **2 Medium Critical product. Correction important to assure system operation.**
  - **3 Low Non-critical product. Correction recommended to assure continued level of support**

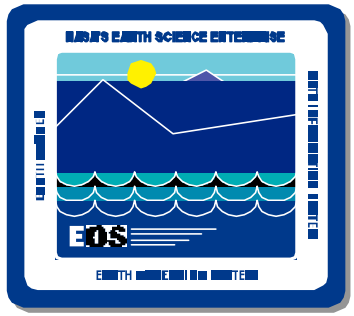
- **High/Medium severity NCRs are addressed right away to ensure findings which impact the integrity of the system are corrected**

Results -- VATC



- COTS HW
- COTS SW
- Custom SW
- OS Patches

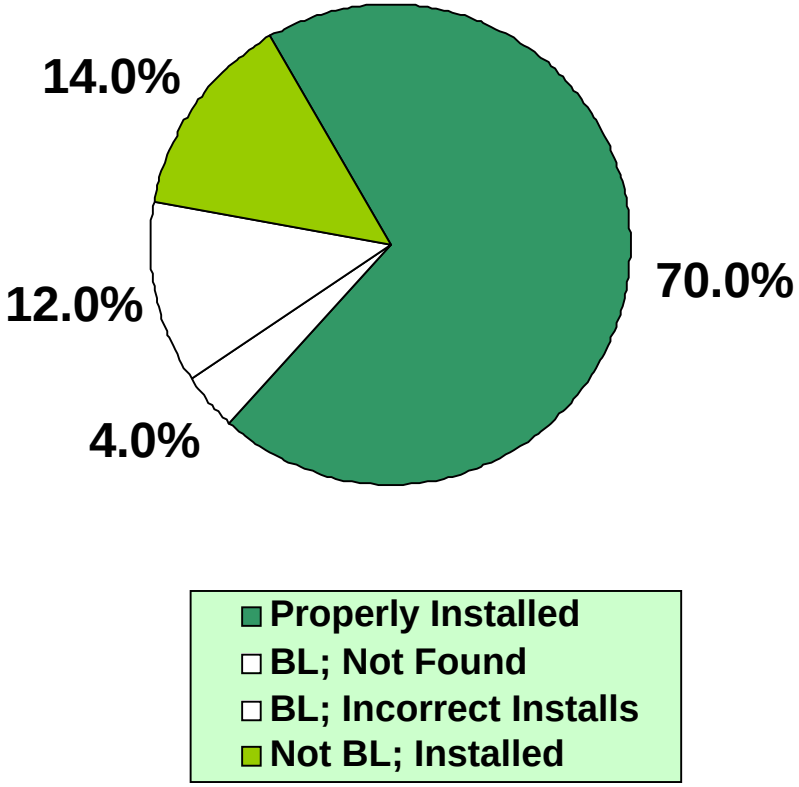
Results -- VATC COTS HW



- **As-Built to HW Baseline Technical Documentation**
  - **Floor Plan, Cable Management Plan, HW Network Diagram**
    - **Findings documented as low severity NCRs**
      - Updates to baseline documentation
  - **HW Design Diagram**
    - **Findings documented and addressed as medium and low severity NCRs**
      - 1 configuration change to t0icg03
      - 14 updates to HW Design Diagram to reflect As-Built audit results

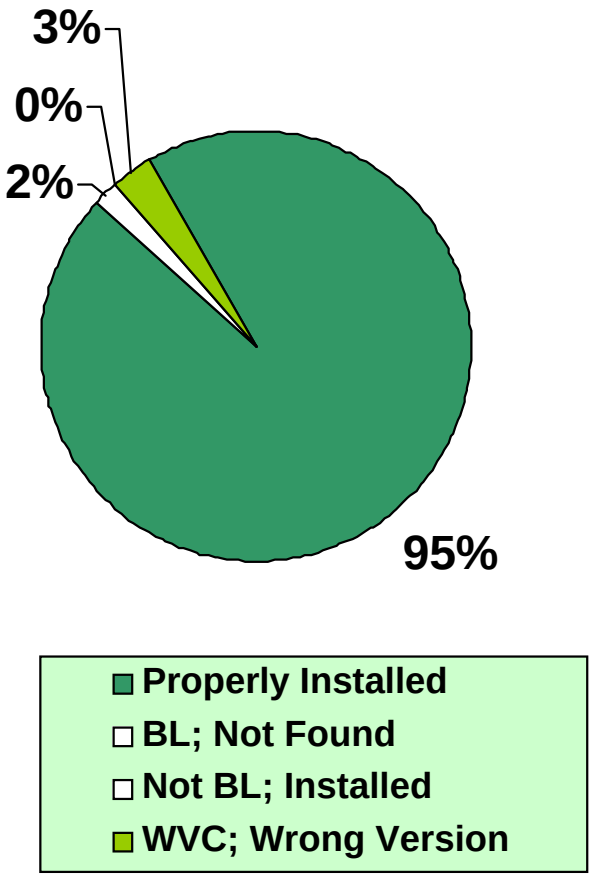
Results -- VATC COTS SW

Investigation Completed on 5/8/00



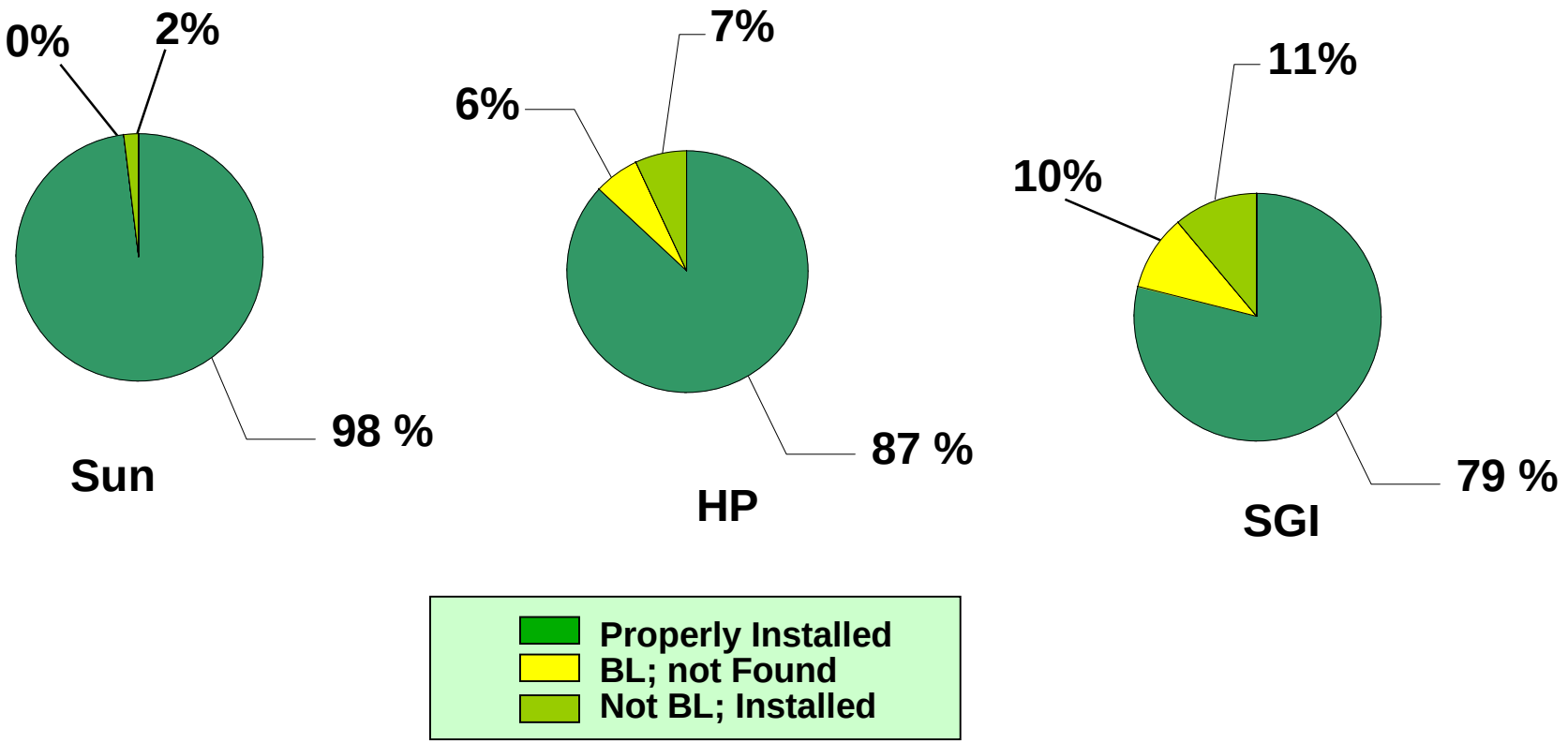
Results -- VATC Custom

Investigation Completed on 5/8/00

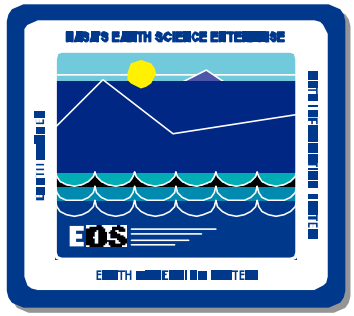


Results -- VATC OS Patches

Investigation Completed on 5/4/00

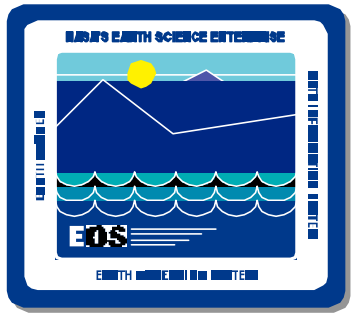


VATC Workoff Plan



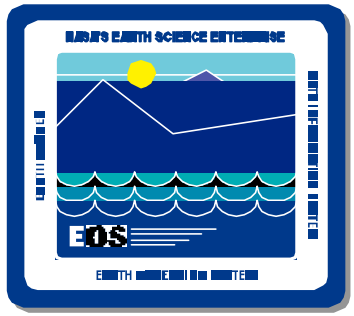
- **Completed Activities - Ensures the integrity of the system**
  - **COTS SW Baseline Documentation Changes were completed on 4/24/00**
  - **High/Medium NCRs were addressed and verified**
- **Outstanding Activities - Do not impact the integrity of the system**
  - **Low Impact NCRs Completed by 5/22/00**
    - **Updates to the baseline documentation**
      - **COTS HW**
      - **OS Patches**
      - **Custom SW**

Results -- PVC



- COTS HW
- COTS SW
- Custom SW
- OS Patches

PVC PCA Results -- COTS HW



As-Built to HW Baseline Technical Documentation

– **Floor Plan, Cable Management Plan, HW Network Diagram**

- **Findings documented as low severity NCRs**

  • Updates to baseline documentation

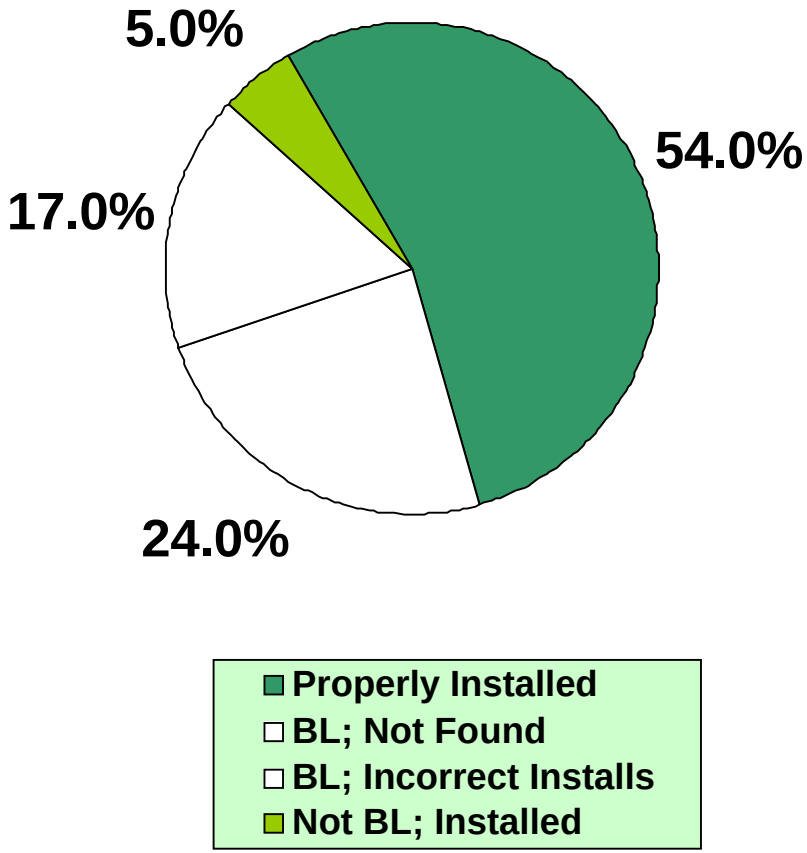
– **HW Design Diagram**

-**Findings documented and addressed as low severity NCRs**

  • 40 updates to HW Design Diagram to reflect As-Built audit results

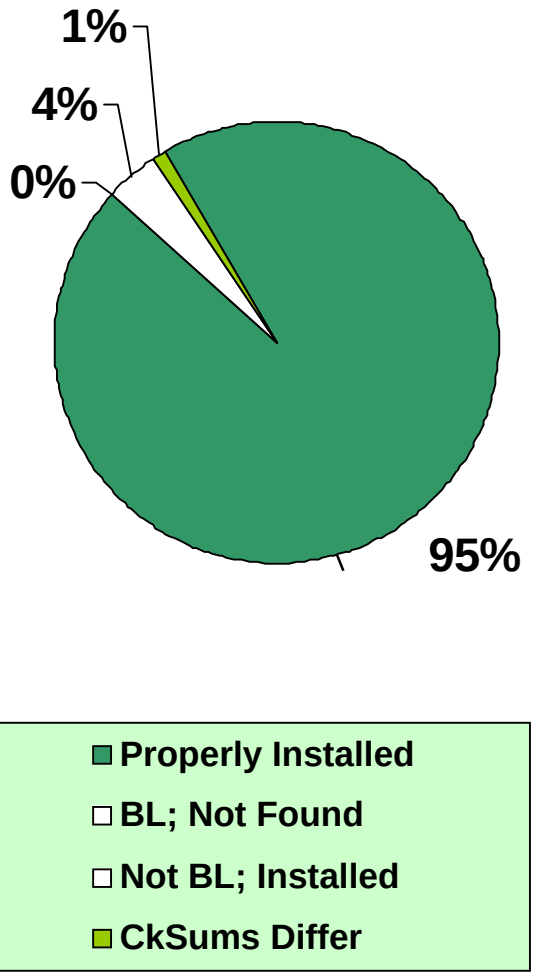
Results -- PVC COTS SW

Investigation Completed on 5/8/00



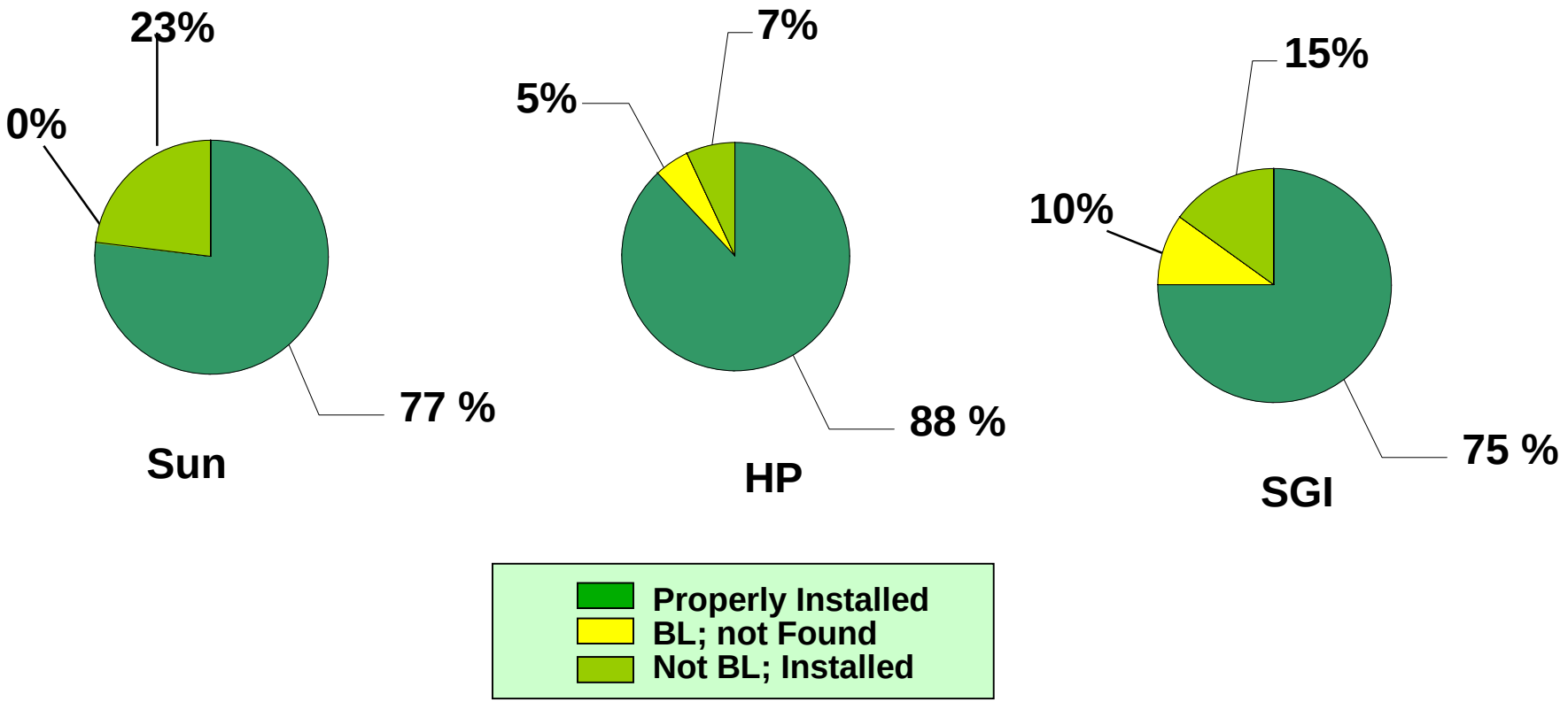
Results -- PVC Custom

Investigation Completed on 5/8/00

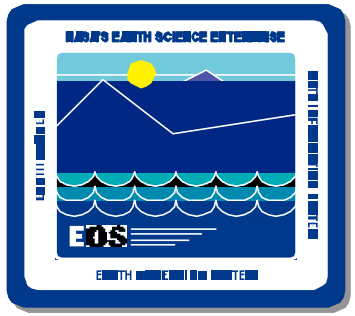


Results -- PVC OS Patches

Investigation Completed on 5/4/00



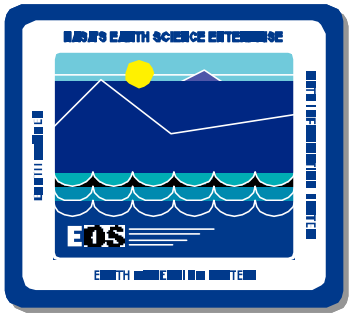
PVC Workoff Plan



- **Completed Activities - Ensures the integrity of the system**
  - **COTS SW Baseline Documentation Changes were completed on 5/8/00**
  - **High/Medium NCRs were addressed and verified**

- **Outstanding Activities - Do not impact the integrity of the system**
  - **Low Impact NCRs Completed by 5/22/00**
    - **Updates to the baseline documentation**
      - **COTS HW**
      - **OS Patches**
      - **Custom SW**

PCA Summary

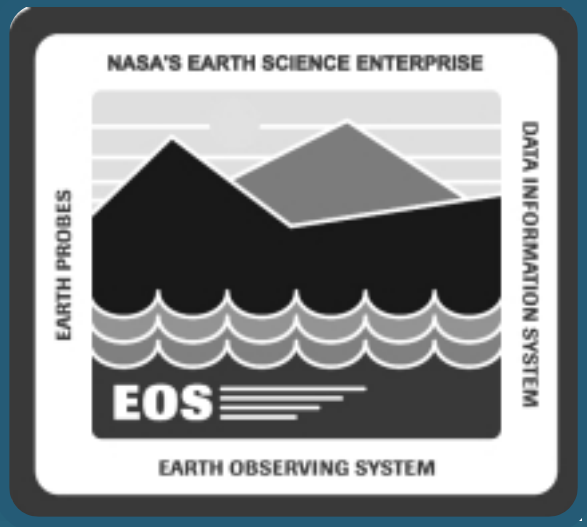


PCA audits completed for PVC & VATC:

- **Configuration analyzed against System Baseline**
- **Completed the COTS SW Baseline Documentation changes**
- **Addressed and Verified High/Medium NCRs**
- **Developed Workoff Plan to address Low severity NCRs**

The results of the audit gives us confidence in the integrity of the system's configuration

PCAs will be performed against the DAACs following CSR & prior to SRA as coordinated with the DAACs.



Concluding Remarks

Mark McBride

Raytheon